Operating Instructions

LINEAR MOTOR ARM
STEREO TURNTABLE

PL-L1000A

HBT
S/G

Thank you for buying this Pioneer stereo turntable.
Please read through these operating instructions and then you will know how to operate your model properly. After you have finished reading the instructions, put them away in a safe place for future reference.

These operating instructions are based on the HBT model, and they can be used for the S/G model. The differences between the models are given below.

Power Requirements

HBT model: AC220/240V ~ (switchable), 50, 60Hz
S/G model: AC110/120/220/240V ~ (switchable), 50, 60Hz

NOTE:
Read through the section on the "LINE VOLTAGE SELECTOR SWITCH" before using your turntable and check that the voltage selector switch is set correctly for use in your area.

Accessories

HBT model:

A cartridge is not provided with this model, and so before use, provide yourself with the cartridge you intend to use, read through the section "ATTACHING THE CARTRIDGE" and then attach the cartridge to the accessory headshell.

S/G model:

This model comes with the PC-4MC cartridge (which is attached to the accessory headshell).

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IMPORTANT

(Applicable to HBT model only)

To prevent electric shock, do not remove cover. No user serviceable parts inside, refer servicing to qualified service personnel. Always disconnect all the equipment from the mains supply when disconnecting the signal leads. The power cord should be connected last, make sure that the power switch is off.
Unplug the set from the wall socket when it is not to be used for an extended period of time.

FOR USE IN UNITED KINGDOM AND AUSTRALIA

CAUTION 240 V: **Mains supply voltage is factory adjusted at 240 V.**

FOR USE IN UNITED KINGDOM

Equipment sold in the U.K. is not supplied with a power plug.
The wires in this mains lead are coloured in accordance with the following cord:

Blue:	Neutral
Brown:	Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured marking identifying the terminals in your plug proceed as follows.
The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.
The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

LINE VOLTAGE SELECTOR SWITCH

The line voltage selector switch is located on the top surface of the cabinet of this turntable. Before your turntable is shipped from the factory, the switch is set to the power requirements of the turntable's destination, check that it is set properly before plugging the power cord into the outlet. If the voltage is not properly set or if you move to an area where the voltage requirements differ, adjust the selector switch as follows:

1. Disconnect the power cord.
2. Provide yourself with a medium-sized screwdriver. Insert the tip of the screwdriver into the groove of the selector switch and turn it so that the power voltage marking of your area points to the arrow on the label .

HBT model

S/G model

FEATURES

Linear Tracking Tonearm

This turntable comes with a linear tracking tonearm which traces the sound grooves on the record linearly in the same way that the master cutting machine cuts the grooves in the first place. This means that the linear system is superior to conventional offset tonearms in many ways.

(1) There is no tracking error thus preventing the generation of harmonic distortion.
(2) In principle, there is no generation of inside force and so the crosstalk and intermodulation distortion are improved and the positioning of the sound images is stabilized.
(3) The tonearm pipe is linear for optimum lateral balance.
(4) It is possible to shorten the effective length of the tonearm and so this feature makes for a low equivalent mass and high rigidity This combination also reduces resonance in the parts and compound resonance.

Linear Motor, Direct Drive Mechanism

A linear motor is used to drive the tonearm directly, and an optical no-contact servo system is also employed. These systems enhance the signal-to-noise ratio to better than 78dB (DIN-B) making it possible to reproduce at a very high level of fidelity.

Quartz PLL controlled Coreless Motor with SH Type Rotor

The coreless type motor eliminates cogging, a major cause of speed deviations, and the SH rotor bearing construction lowers the center of gravity of the rotating section to significantly heighten rotational stability. The quartz phaselocked-loop (PLL) circuitry constantly corrects even slight speed deviations to guarantee consistently excellent rotational precision at practically any load.

Electronic Full Auto Mechanism

The model's full auto mechanism is based on optical, and therefore no-contact, detection principles so that force is not needlessly exerted on the tonearm. When the switch is depressed, the tonearm automatically swings over to the record and play begins.

Manual and remote tonearm control

The tonearm can be moved across to the record track manually as with offset tonearms. In addition, by pushing the function switch, it is possible to operate the tonearm remotely by causing it to move to the left or right. In this way, it is easy to bring the tonearm across to the track you want to hear.

All-electronic Durable Quick Stop Function

The model incorporates an all-electronic brake to bring the platter to a halt instantly. When the tonearm swings back to the arm clamp, a current flows in the opposite direction so that the platter is rotating to the motor drive coil and, in an instant, the platter has stopped.

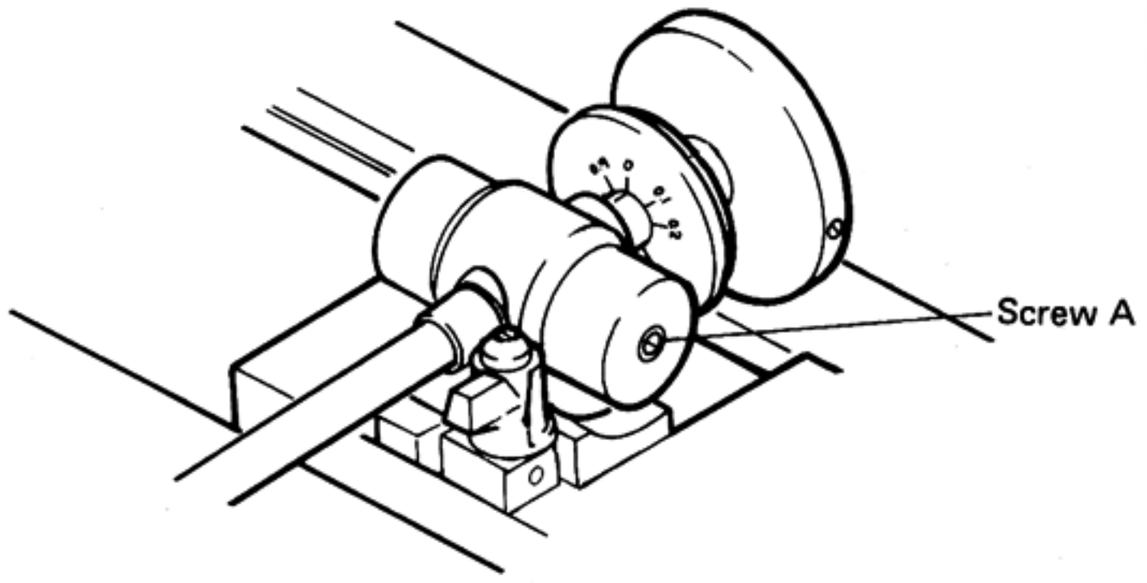
Low Acoustic Feedback, Vibration-resistant Coaxial Suspension System

The platter and the tonearm are secured to the base board, and the base board is spring-mounted and separated from the cabinet with what Pioneer calls the coaxial suspension construction. This cuts out virtually all of the vibrations transmitted from the floor, and greatly reduces the chances of feedback.

BEFORE USING THE TURNTABLE

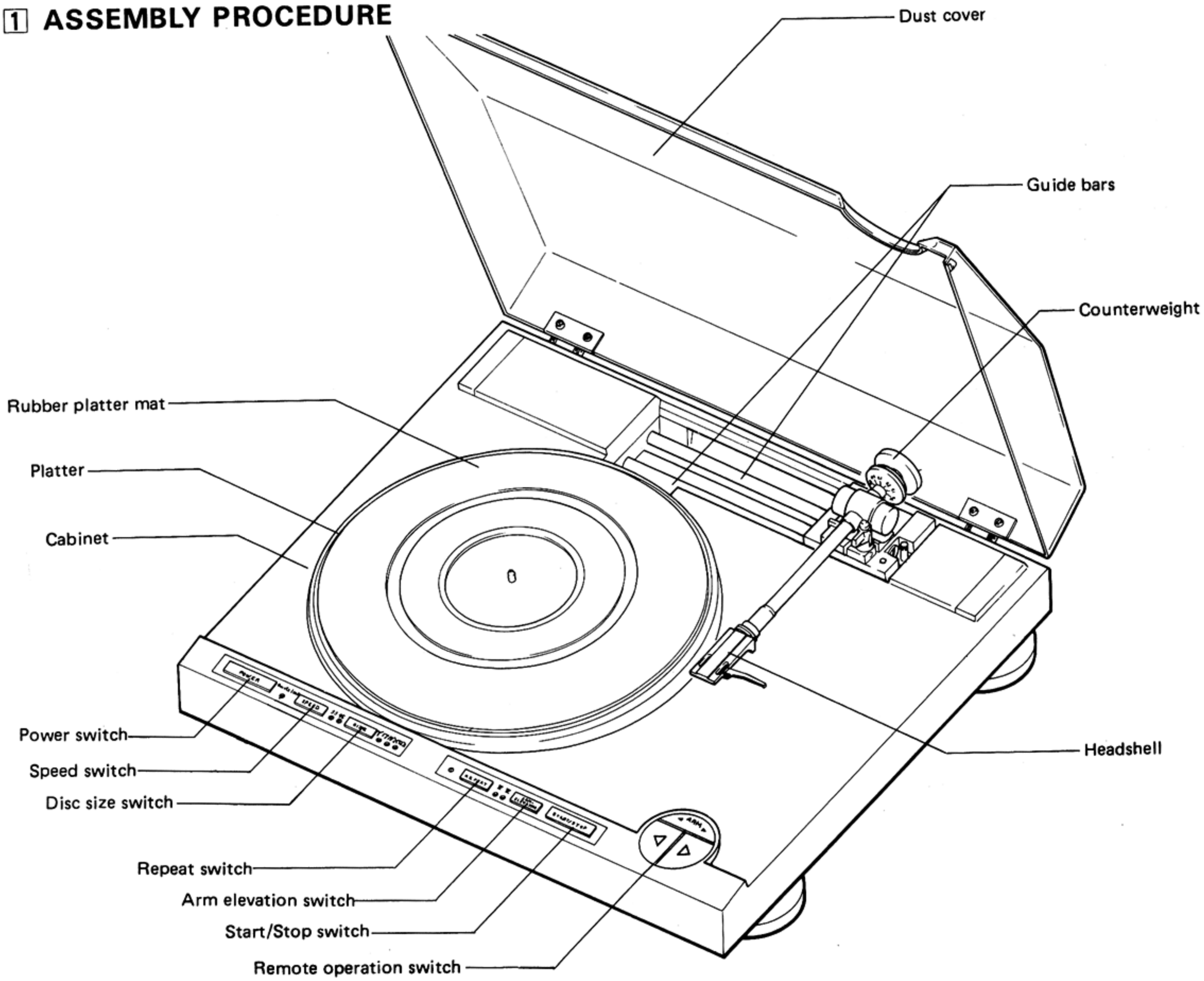
Pay attention to the following points when adjusting and operating this turntable:

1. When performing adjustments, do not turn any screws other than those specifically mentioned in the directions. For example, screw A should never be touched. Be particularly careful to follow the procedure described on pages 9 – 11 (Adjusting the Tonearm) while performing tonearm adjustments.
2. Be sure the cartridge is properly attached to the headshell. If the stylus is out of line, it may not lower onto the correct position on the record. Follow the steps in Attaching the Cartridge section carefully (page 7).
3. Be sure the tonearm height adjustment is correct. If the tonearm height is off by a large margin, the turntable will not operate properly.



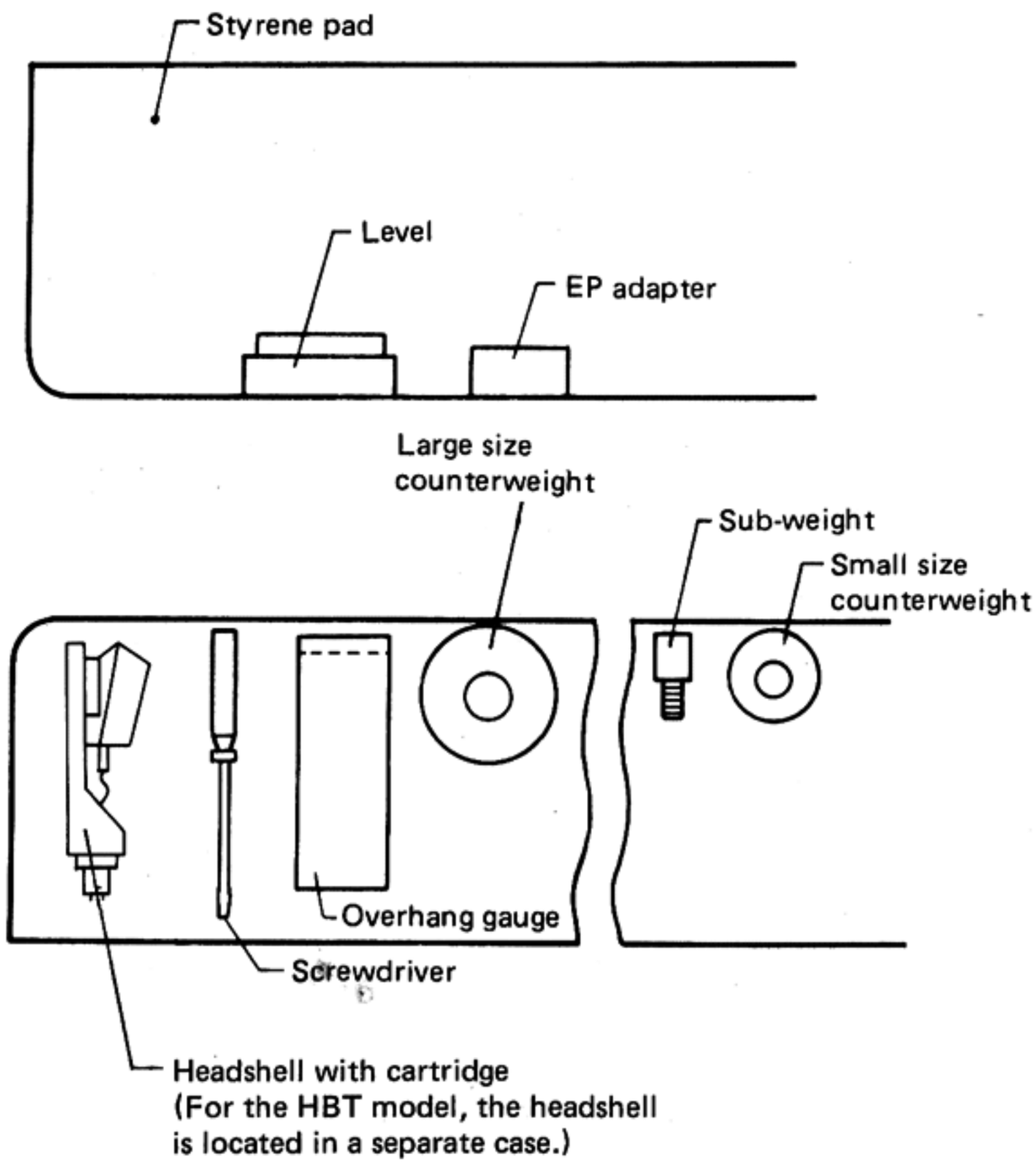
SETTING UP THE TURNTABLE (Complete [1] through [4] before operating turntable)

[1] ASSEMBLY PROCEDURE



STEP 1: CHECK THE ACCESSORIES

The styrene pad contains the parts shown in the figure. Check that they are all inside. The EP adapter is used for records with a large center hole.

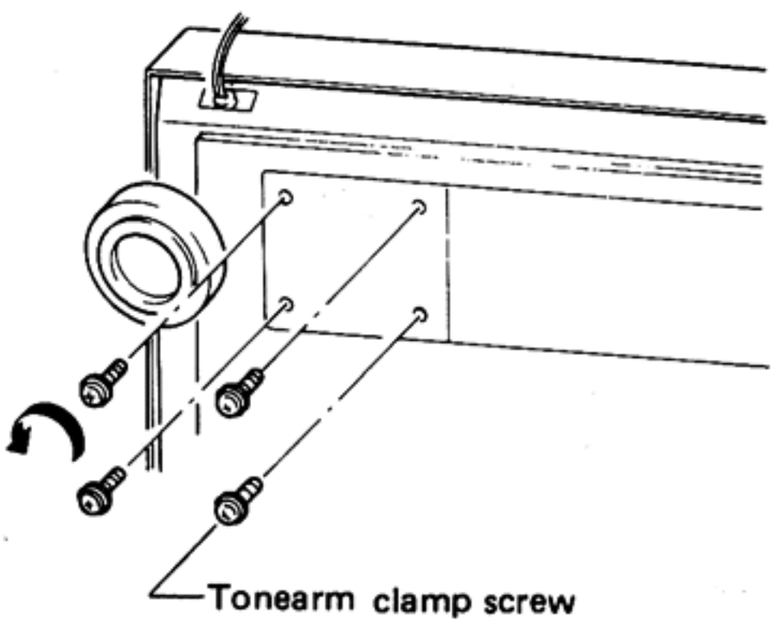


STEP 2: REMOVING DUST COVER

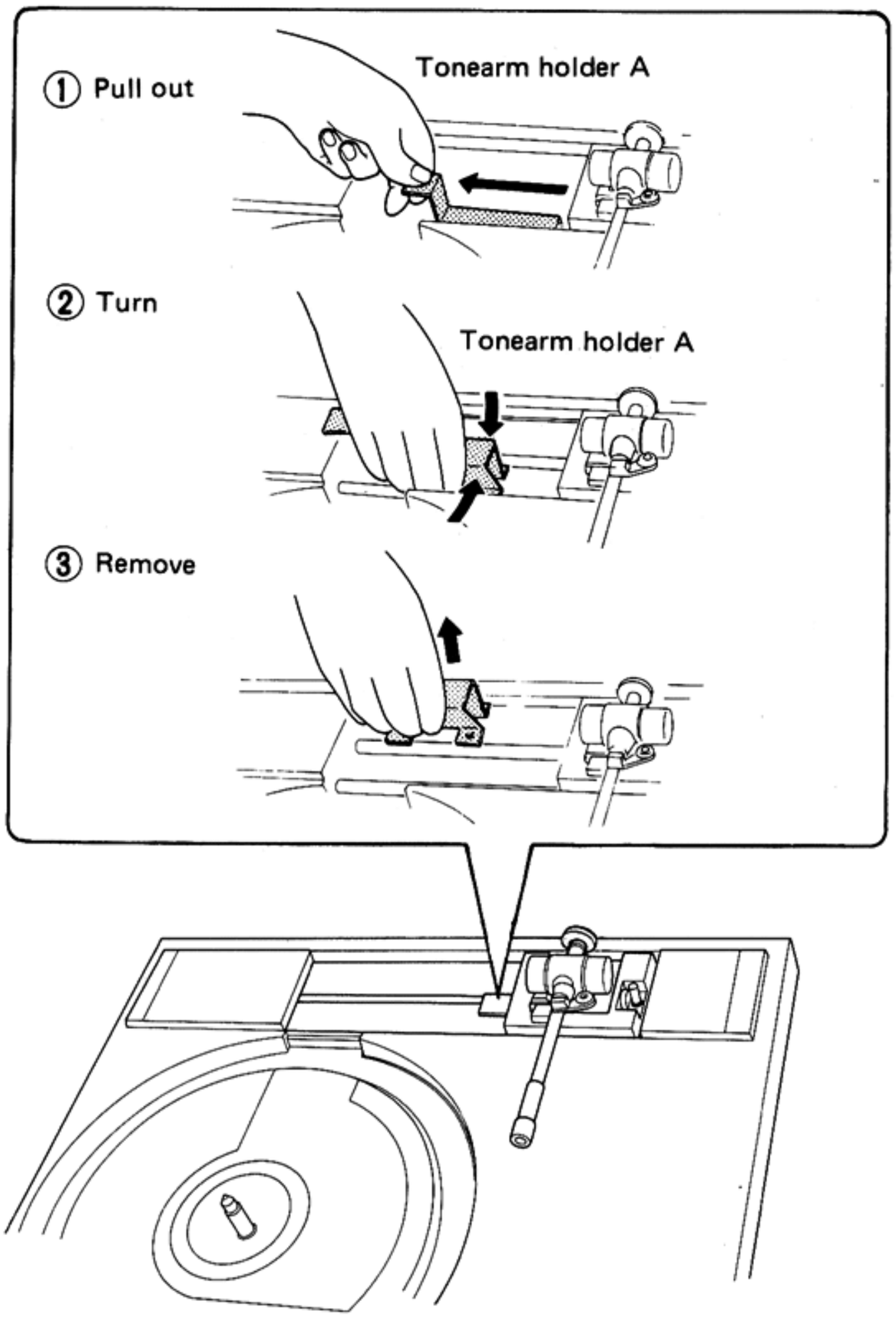
1. Fully open the dust cover.
2. Hold the dust cover, and lift it off by pulling it straight upward.

STEP 3: REMOVAL OF TONEARM CLAMP SCREWS AND TONEARM HOLDER A

1. The tonearm is anchored to prevent damage which might be sustained during transportation. Use a Phillips screwdriver to remove the four tonearm clamp screws on the bottom plate as shown in the figure.

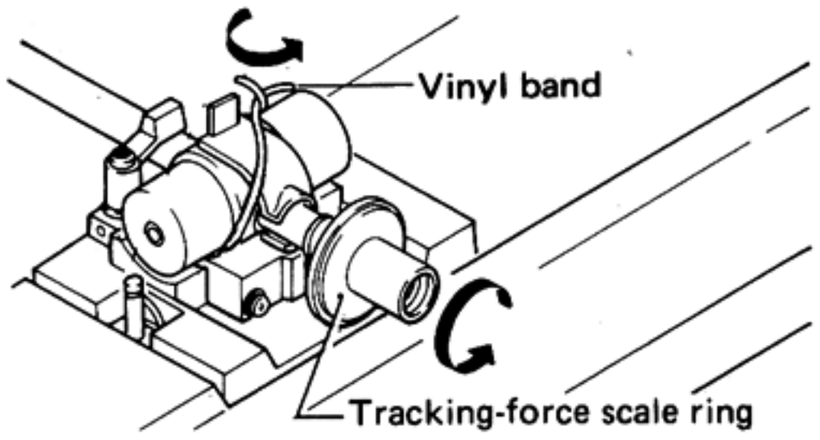


2. Remove the tonearm holder A as shown in the figure below.



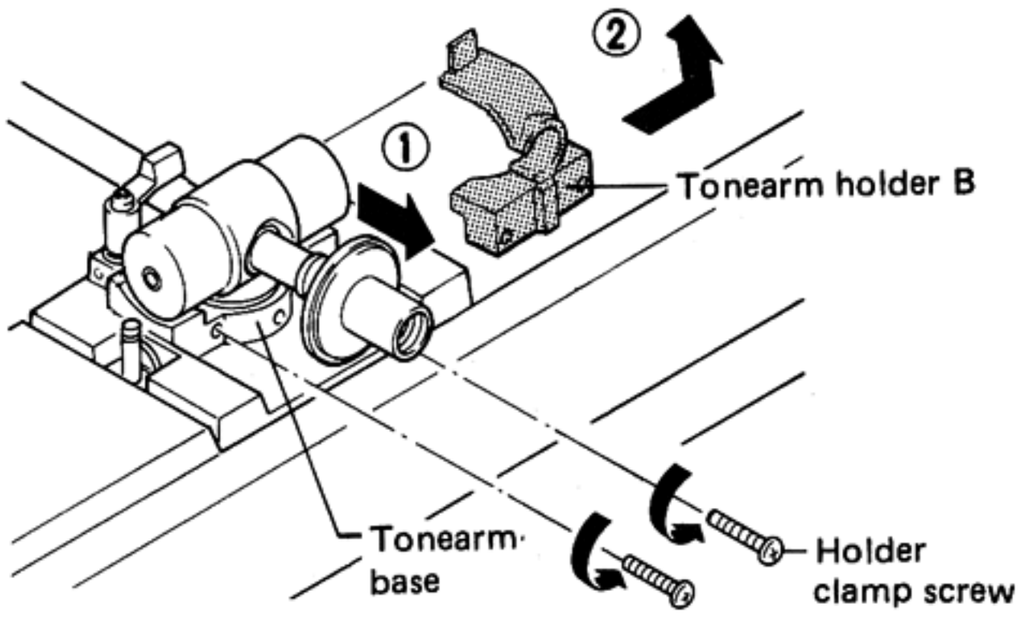
STEP 4: REMOVAL OF TONEARM HOLDER B

1. Twist the vinyl band as in the figure and detach from the tonearm. Do not force it when pulling it out.
2. Rotate the tracking-force scale ring between 5 and 7 turns in the direction shown by the arrow in the figure.



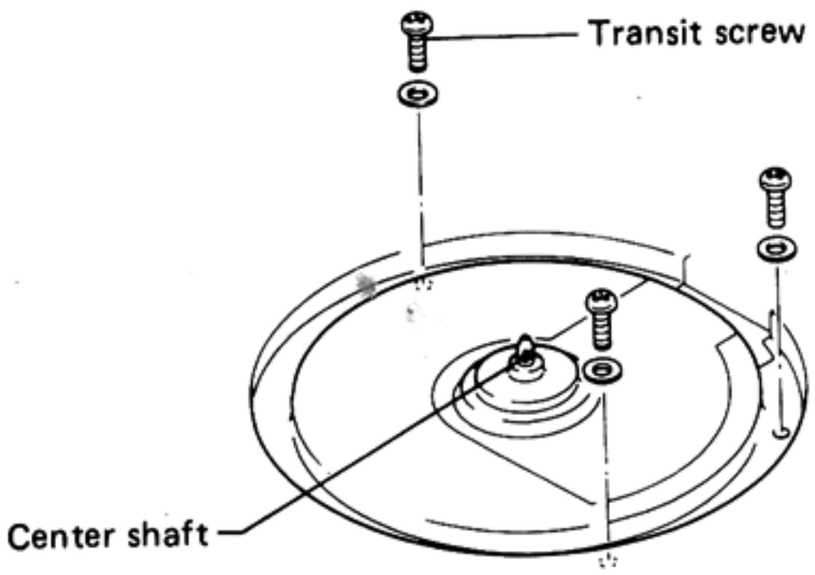
3. Use a Phillips screwdriver to remove the two screws. Be careful not to drop screws into the hole in the tonearm base.

4. Remove the tonearm holder B from the tonearm base.



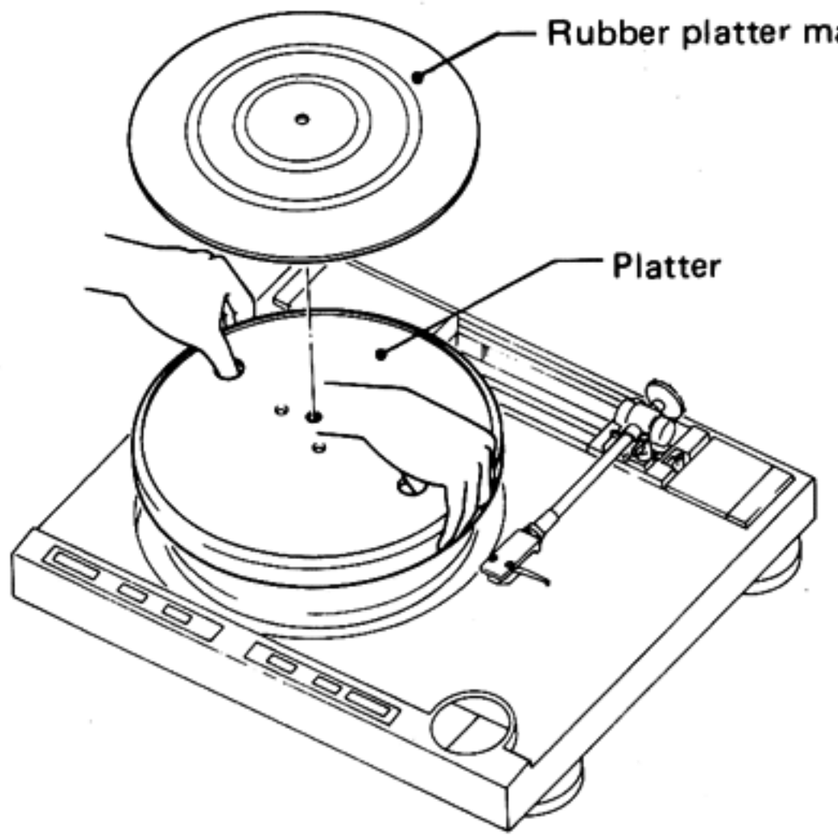
STEP 5: REMOVING TRANSIT SCREWS

Remove three transit screws with a Phillips screwdriver as shown below.



STEP 6: MOUNTING THE PLATTER AND RUBBER PLATTER MAT

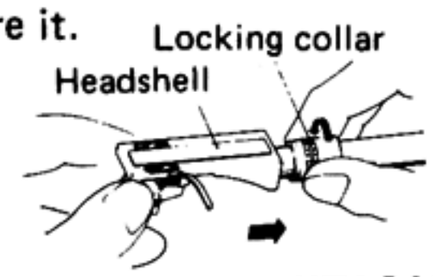
1. Place the platter over the center shaft.
2. Put the rubber platter mat on top of the platter.



STEP 7: MOUNTING THE HEADSHELL

Install the cartridge as described on page 7 "ATTACHING THE CARTRIDGE" and attach the headshell to the tonearm as follows:

Insert the headshell into the end of the tonearm, and rotate the locking collar in the direction indicated by the arrow in the figure until it stops. Then secure it.



STEP 8: MOUNTING THE COUNTERWEIGHT

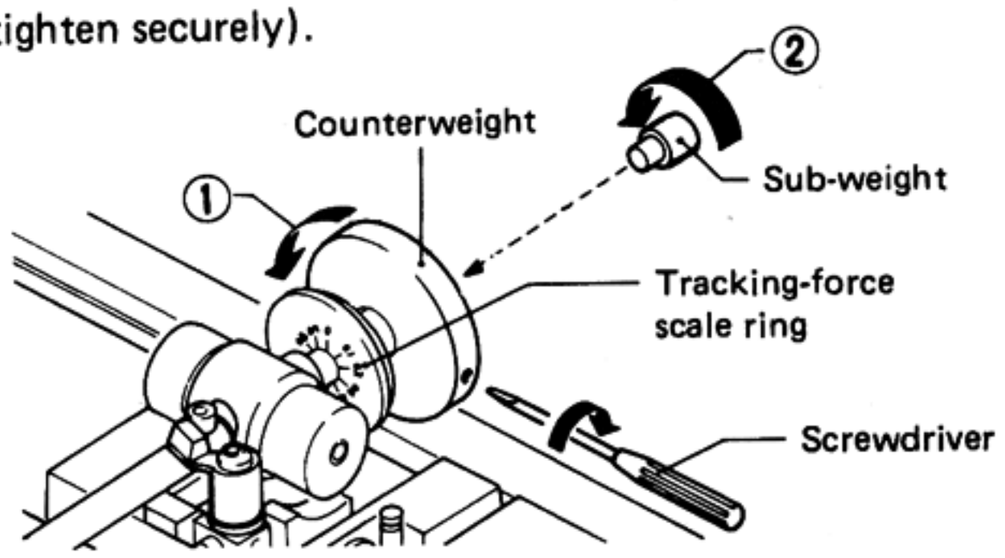
Before mounting

The weight (or weights) which are mounted differ according to the total weight of the headshell and cartridge which are used. Use the table below as a guideline for the mounting of the counterweight and sub-weight. (The accessory headshell weights 10.5 g.)

Combined weight of cartridge & headshell	Weight(s) used
6 to 11 g	Small size counterweight only
10 to 15 g	Small size counterweight and sub-weight
15 to 28 g	Large size counterweight only
19 to 32 g	Large size counterweight and sub-weight

How to mount

Slip the counterweight onto the tracking-force scale ring at the end of the tonearm (this applies to the large size or small size counterweight), rotate the screw with the accessory screwdriver and tighten securely. When mounting the sub-weight, first rotate the counterweight until it stops in the direction of arrow ① in the figure and then mount the sub-weight in the screw hole on the rear end of the tonearm (rotate it until it stops in the direction of arrow ② and tighten securely).



NOTES:

- *Mount the counterweight and sub-weight properly. If they are not secured properly, it will not be possible to adjust the tracking force accurately.*
- *The mounting position of the counterweight differs according to the cartridge used. First mount it in the rough position and when the tracking force is adjusted, re-position it optimally.*

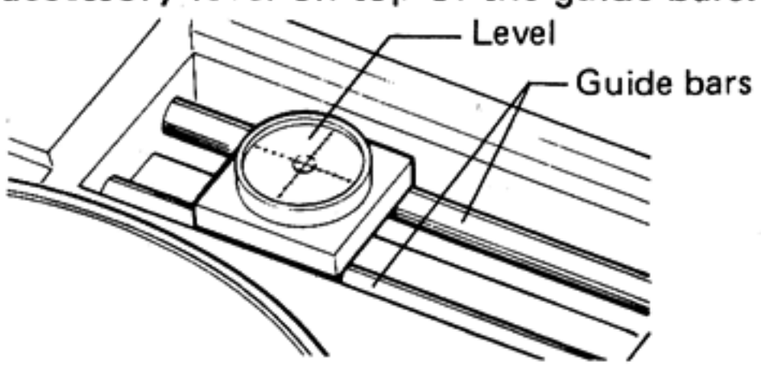
STEP 9: MOUNTING THE DUST COVER

To install, insert the hinges of the dust cover into the hinge sockets of the cabinet, and push the dust cover downward.

STEP 10: ADJUSTING THE HEIGHT OF THE CABINET

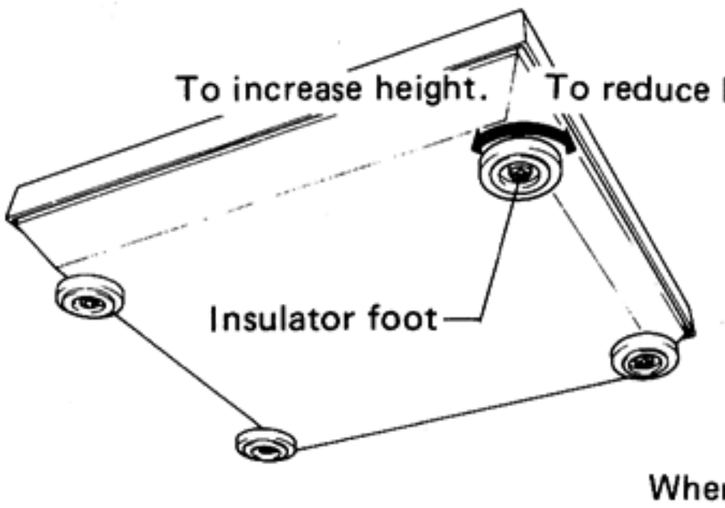
Because of the construction of the model's tonearm, the turntable should be installed so that the cabinet is level. If it is not perfectly level, the tonearm will slide to the left or right and so follow the steps below and install it properly.

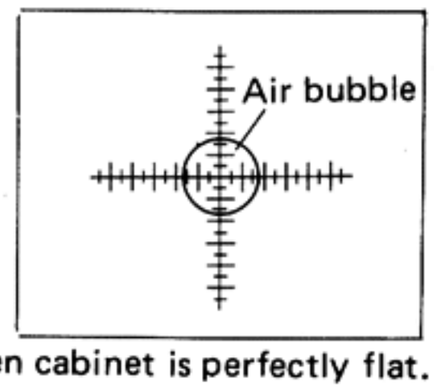
1. Install the turntable.
2. Place the accessory level on top of the guide bars.



NOTE:
The PL-L1000A adopts the linear tracking system in which the tonearm moves along two guide bars. Level adjustment of the guide bars is necessary. Be sure to attach the level to the guide bars and adjust before use.

3. Refer to the figure. Adjust the front and back, left and right insulator feet by rotating them so that the air bubble in the level is brought to the center. To rotate the insulators, lift the cabinet up to allow rotation.





When cabinet is perfectly flat.

NOTE:
After adjusting the cabinet height, be sure to remove the level from the guide bar.

ATTACHING THE CARTRIDGE (Applicable to HBT model only)

You can attach any cartridge to this turntable weighing between 4g and 24g providing that only the accessory headshell is used with it. Follow the procedure outlined below for attaching the cartridge to the headshell.

1. The terminals on the accessory headshell are aligned as shown in Fig. A. Check the location and polarity of each of the cartridge's terminal pins and then connect the lead wires, taking care to get the polarities connected properly.
2. Attach the cartridge loosely to the headshell using the screws, nuts and washers (Fig. A).

Be careful that the cartridge mounting nut does not come into contact with the cartridge body. If the nuts touch the cartridge, hum (buzzing noise) may be generated.

NOTE:
Do not solder when you connect the lead wires to the cartridge. If the lead wire lugs are loose, use a pair of tweezers or a similar object to pinch in the end lightly.

3. Refer to Fig. B and use the accessory overhang gauge to adjust the overhang so that cartridge stylus tip is positioned over the indicator line of the gauge, and then tighten the cartridge mounting screws. Make sure that the cartridge does not tilt to one side (Fig. C).
   Do not mount the cartridge bent at an angle since the stylus may not descend at the right position on the record.

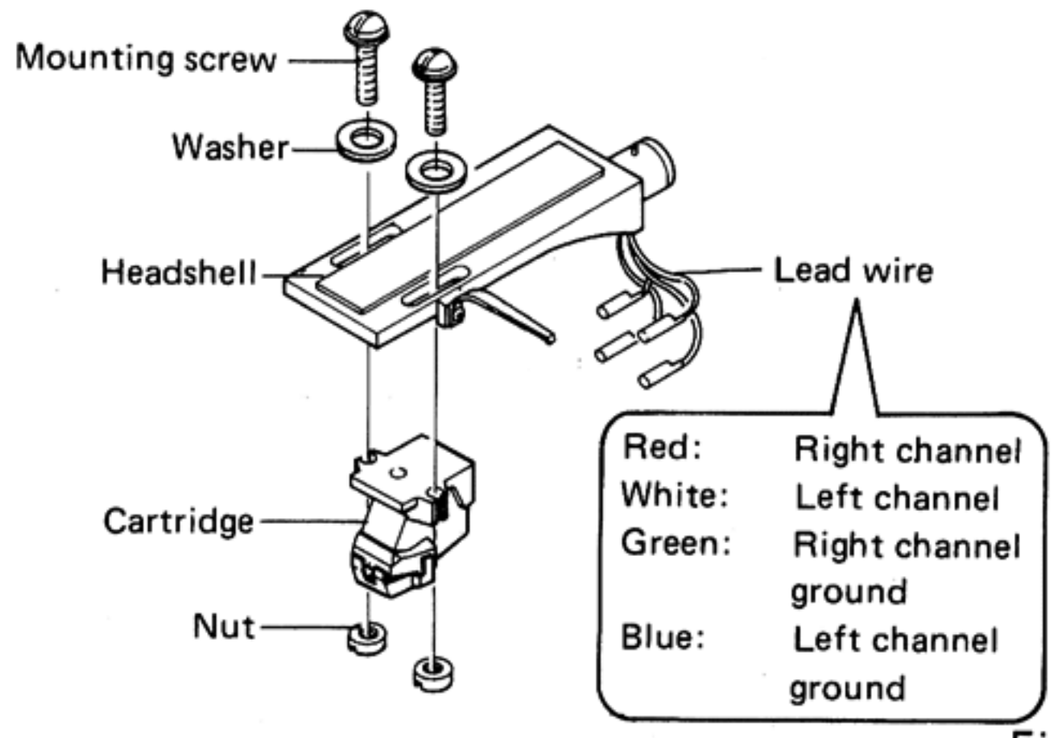


Fig. A

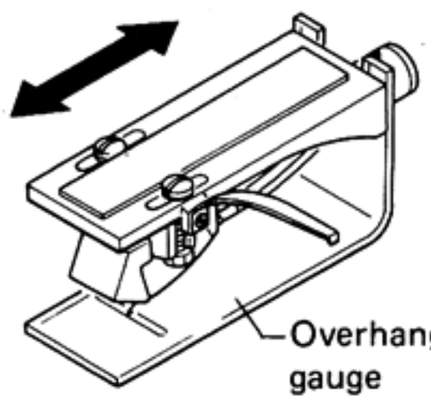


Fig. B

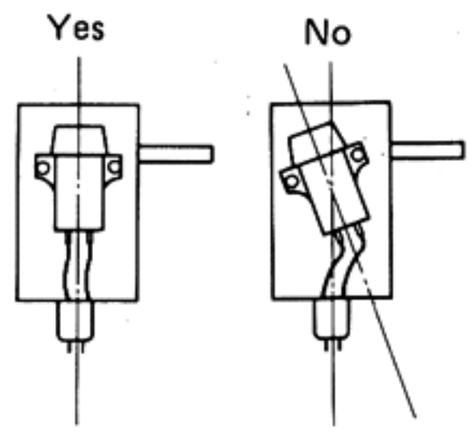
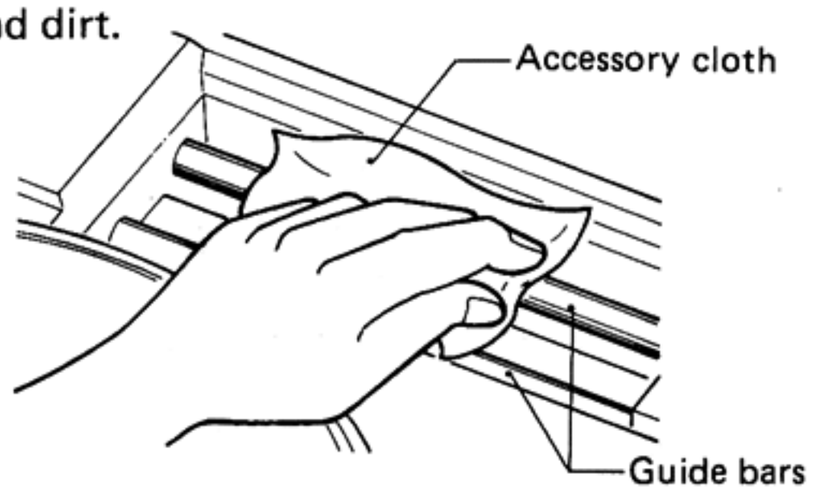


Fig. C

GUIDE BAR MAINTENANCE

Use the accessory cloth to wipe the guide bars and remove the dust and dirt.



2 INSTALLATION

When installing this turntable, make sure that you avoid the following conditions:

Conditions to be avoided	Possible problems caused
(1) Exposure to direct sunlight, high temperatures or high humidity.	(1) Can cause rust or interfere with insulation.
(2) Unstable surfaces.	(2) Will interfere with normal operation of turntable (stylus will jump, etc.).
(3) Dirty or dusty locations.	(3) Can cause scratches.
(4) Exposure to heavy vibrations, such as on the top of speakers.	(4) Can cause feedback.
(5) Proximity to power transformer of the amplifier.	(5) Can cause hum.
(6) Locations where alcohol, insecticides, or flammable substances are frequently used.	(6) Can corrode dust cover or outside of cabinet.
(7) Locations exposed to salt-laden air.	(7) This corrodes the parts and prevents them from operating.

If the turntable is brought into a warm room from previously cold surroundings, or if the room temperature rises suddenly, moisture will form on the operating sections and the turntable will not perform properly.

In a situation like this, leave the turntable in its new environment for about an hour, or try and increase the room temperature gradually before operation.

3 CONNECTIONS TO STEREO AMPLIFIER

BEFORE CONNECTING, CHECK THE FOLLOWING;

- Switch the power to the amplifier off to prevent damage to the speaker system.
- If you are using a low-output moving coil (MC) cartridge, you will need a special MC transformer or a head amplifier, or a stereo amplifier with a built-in MC amplifier.

With the S/G model (the model with the PC-4MC cartridge, plug the phono cables into the PHONO or PHONO MAG jacks of the stereo amplifier.

CONNECTION PROCEDURE

1. Insert the phono cables (white and red) into the PHONO input jacks of the stereo amplifier (white for left channel into L jack, and red for right channel into R jack).
2. Connect the ground lead with the Y-shaped connector at the end to the ground terminal.
3. Insert the power plug into the convenience AC outlet of the amplifier or a wall outlet.

- **Do not allow the phono cables to stretched taut but give them some slack when connecting them. If they are completely taut, this may give rise to feedback.**

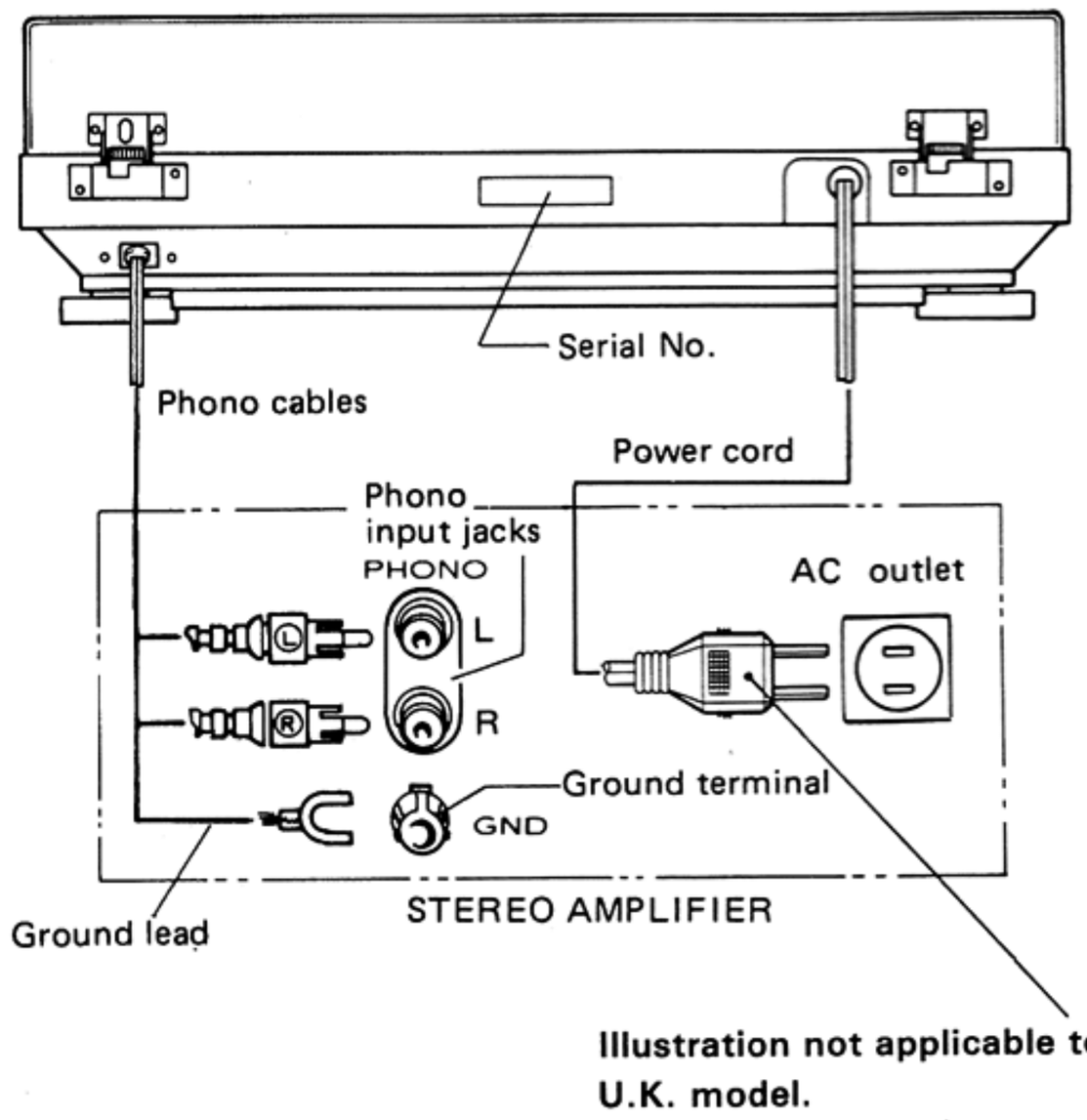
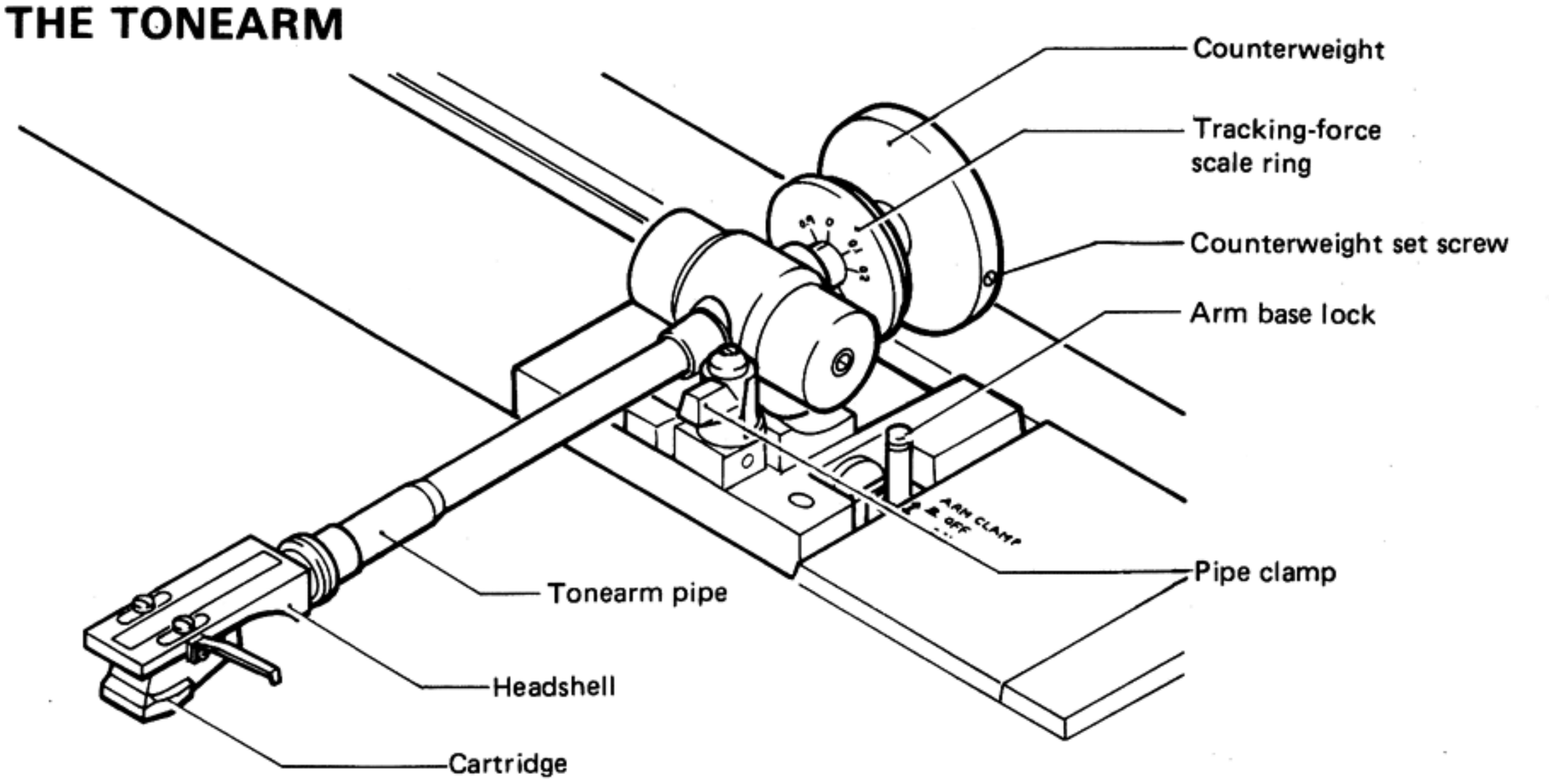


Illustration not applicable to U.K. model.

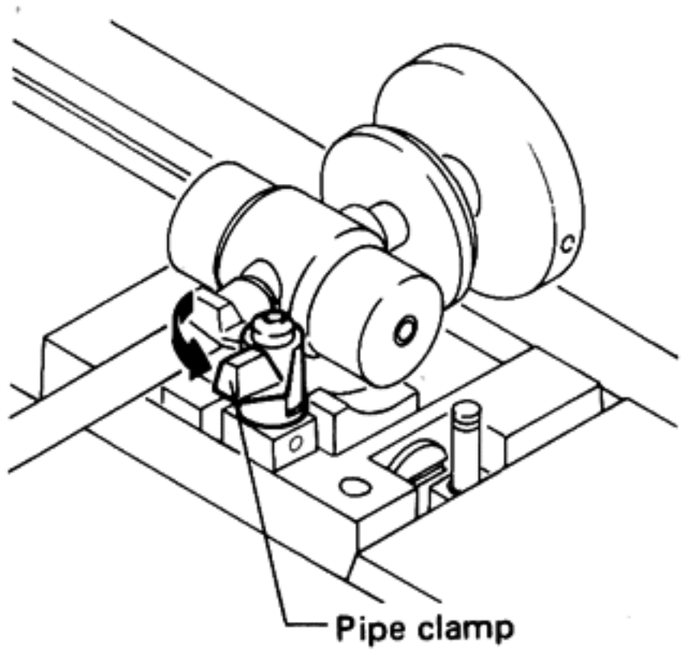
4 ADJUSTING THE TONEARM



The tonearm adjustments have a great effect on the sound which is reproduced from the records. Proceed with these adjustments after you have completed the assembly, installation and the connections to the stereo amplifier.
Make absolutely sure that you perform the adjustments after securing the tonearm base with the lock. Furthermore, check that the stylus position has been properly adjusted. Especially when the cartridge has been replaced, proceed with the tonearm adjustments after adjusting the stylus tip position following the steps under Headshell mounting on page 7.

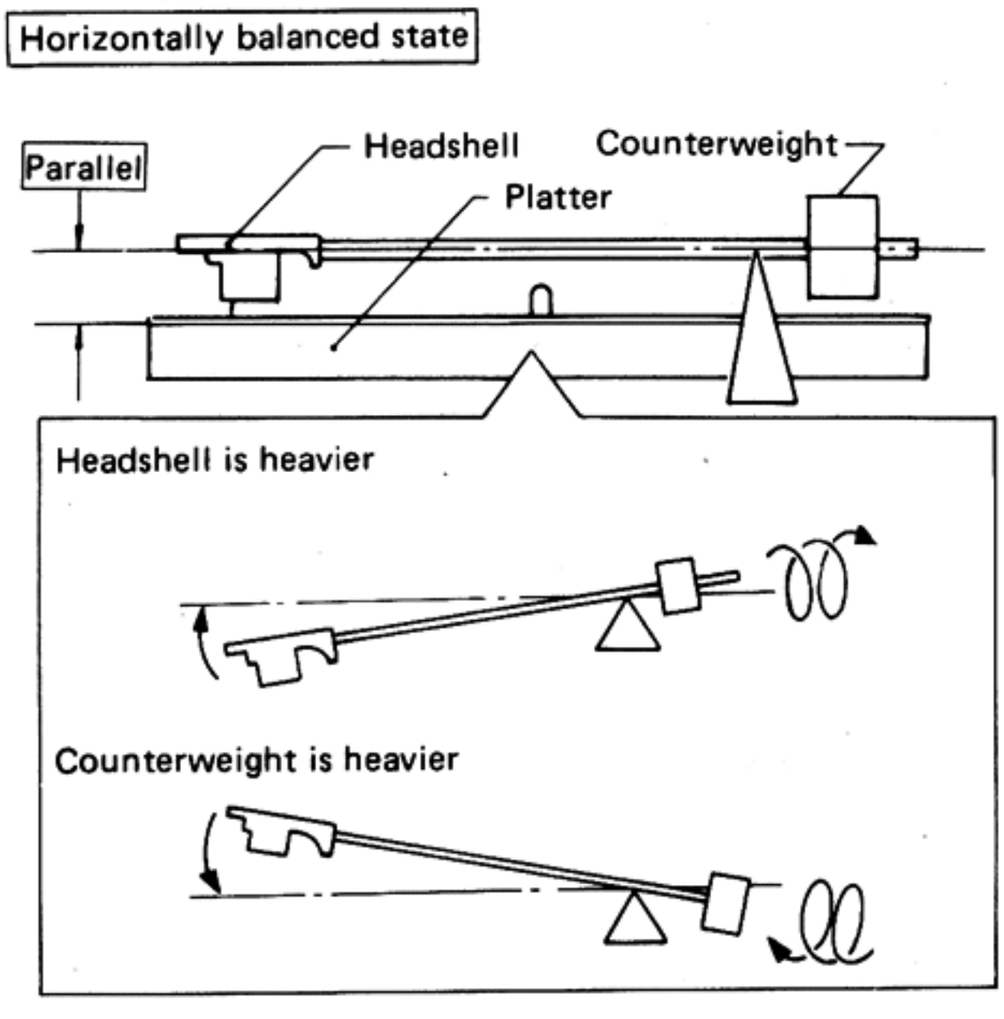
STEP 1: TRACKING FORCE ADJUSTMENT

1. Depress the POWER switch to ON (the UP (▼) indicator of the ARM ELEVATION switch comes on).
2. Rotate the pipe clamp in the direction of the arrow as illustrated and release the tonearm pipe.

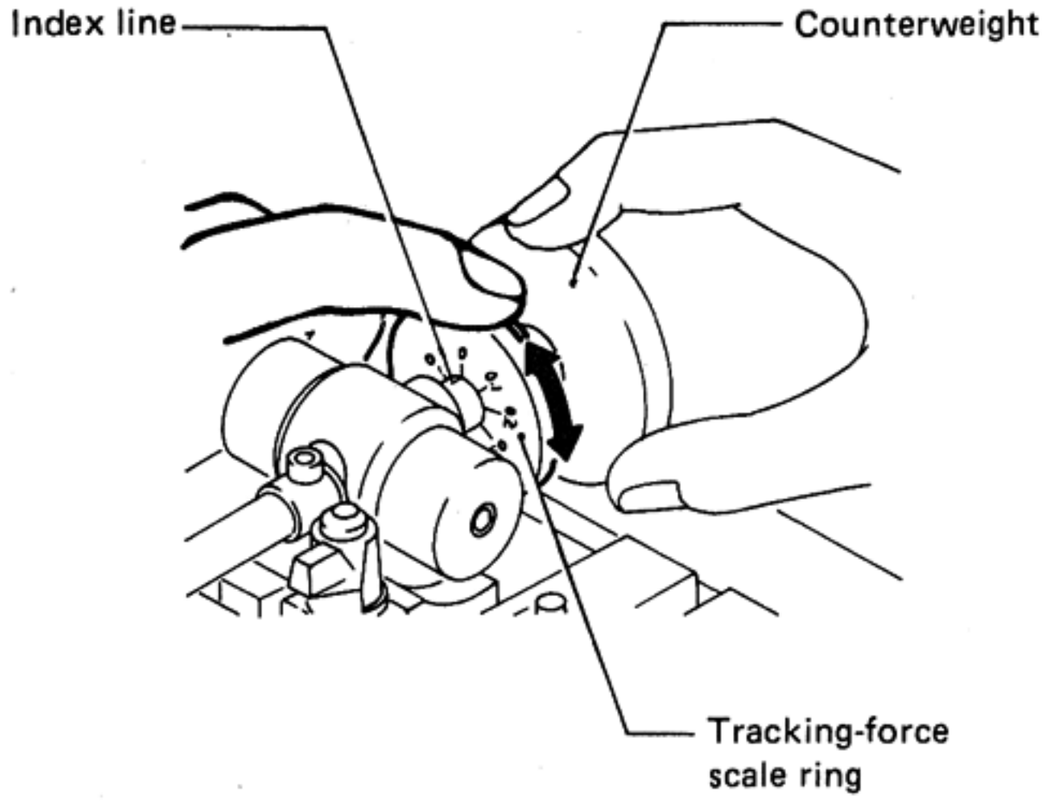


3. Depress the ARM ELEVATION switch to DOWN (the DOWN (▼) indicator comes on).
4. If a stylus cover is mounted on the cartridge, remove it. Hold the headshell with one hand and rotate the counterweight with the other and adjust so that the tonearm does not incline toward the headshell side or counterweight side but remains parallel to the platter as shown in the figure.

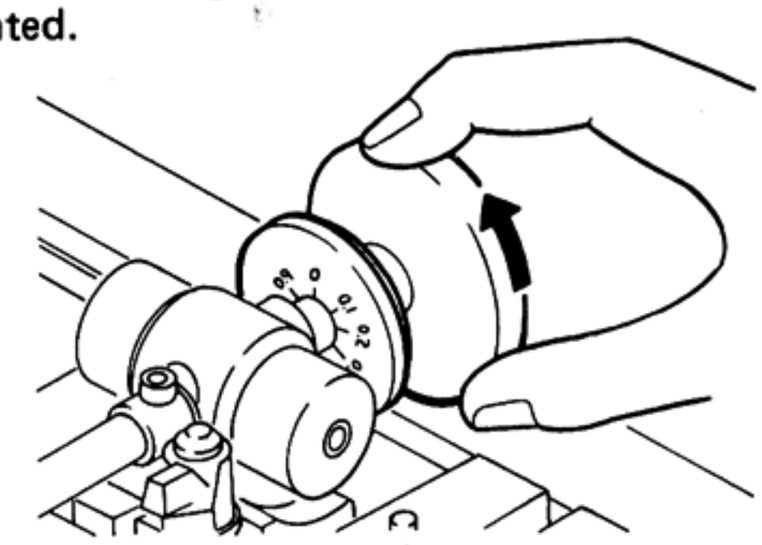
NOTE:
If it is not possible to obtain horizontal balance even by rotating the counterweight, loosen the counterweight's set screw and shift the mounting position to the front or rear.



5. Rotate the tracking-force scale ring and set the "0" to the index line of the counterweight shaft. Do not rotate the counterweight since this will throw the cartridge out of horizontal balance and prevent the correct tracking force from being applied.



6. Rotate the counterweight in the direction of the arrow in the figure and adjust for the recommended tracking force of the cartridge with the index line on the counterweight shaft. The scale units on the tracking-force scale ring differ according to the type of counterweight mounted.



Large size counterweight

One scale unit is equivalent to 0.1g, and a tracking force of 1g is applied with one turn of the weight.

Small size counterweight

One scale unit is equivalent to 0.05g and a tracking force of 0.5g is applied with one turn of the weight.

Note:

The scale units remain the same whether the sub-weight is mounted or not.

The PC-4MC cartridge that comes with the S/G model requires a tracking force of 2 grams.

NOTE:

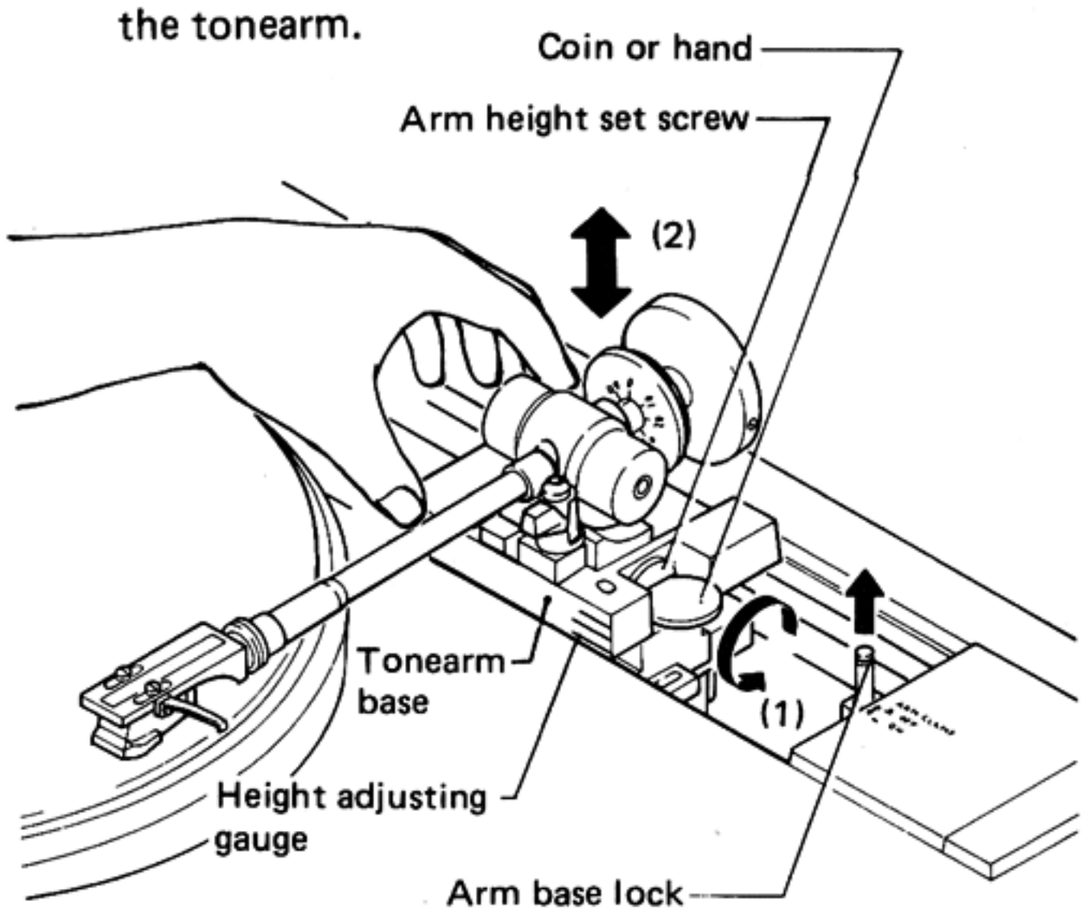
When playing records at low temperatures or when playing records that cause the stylus to jump or the reproduced sound is distorted (records where part of the recording level is set at an extremely high level), increase the tracking force slightly to minimize the mistracking.

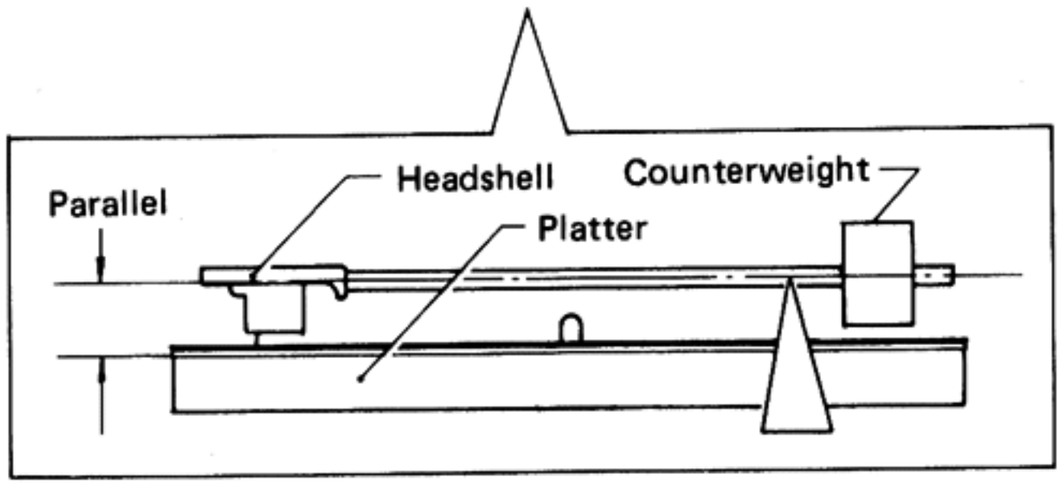
STEP 2: TONEARM HEIGHT ADJUSTMENT

If the tonearm and the platter are not both parallel when a record is being played, the cartridge stylus will not come into contact with the grooves on the record at the right angle and this may result in distortion of the reproduced sound. Perform the adjustments as follows;

1. Place a record on the platter.
2. (1) Raise the arm clamp as in the figure first and then lift the headshell and move it toward the record. The platter will start to move so take care not to allow the stylus to touch the record.
   (2) Depress the POWER switch and set it to OFF. The platter now stops rotating.
   (3) Place the stylus on the record.
   (4) Hold the tonearm pipe with a pipe clamp.
   (5) Use a coin or hand to rotate the arm lock screw in the direction (1) of the arrow as in the figure and loosen it. The tonearm will go to its highest position.
   (6) While holding the headshell with your hand, remove the pipe clamp and slowly place the stylus on the record.
   (7) Move the tonearm up and down (2) as in the figure, adjust it so that it is parallel with the platter, tighten the arm lock screw in the opposite direction to (1) in the figure and secure.

Use the lines located at 1mm intervals on the front surface of the tonearm base is a guide for adjusting the tonearm.

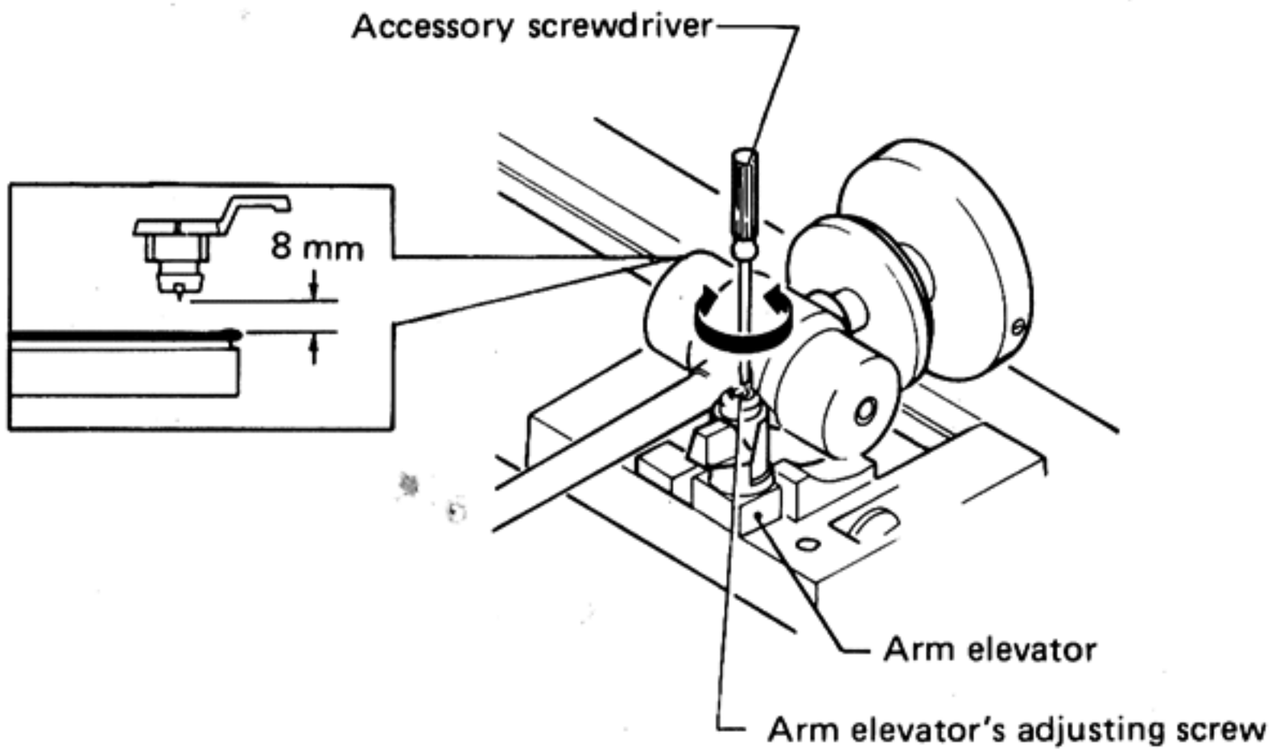




STEP 3: ARM ELEVATION HEIGHT ADJUSTMENT

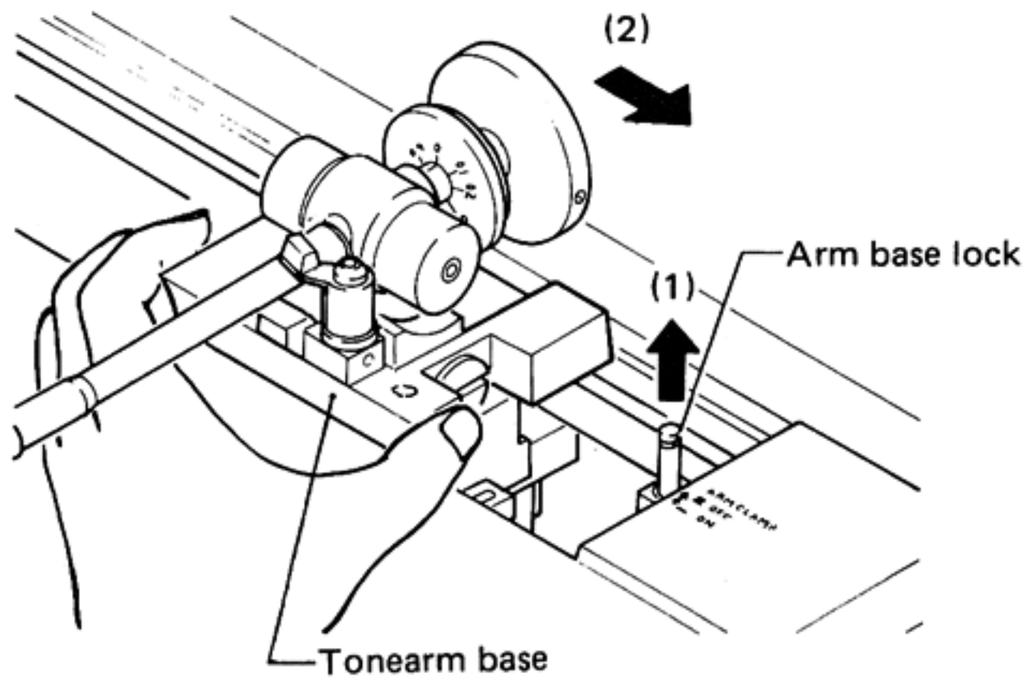
Make sure you proceed with the arm elevation adjustment after you have adjusted the tonearm base height.

1. Depress the POWER switch and switch on the power. The arm elevator automatically rises.
2. After checking that the arm elevator has risen completely, depress the POWER switch again and switch off the power.
3. Using the accessory screwdriver, rotate the arm elevator's adjusting screw until the distance between the record surface and stylus tip is approximately 8 mm. Turning the screw clockwise increases the distance and turning counterclockwise brings the stylus tip closer to the record surface.

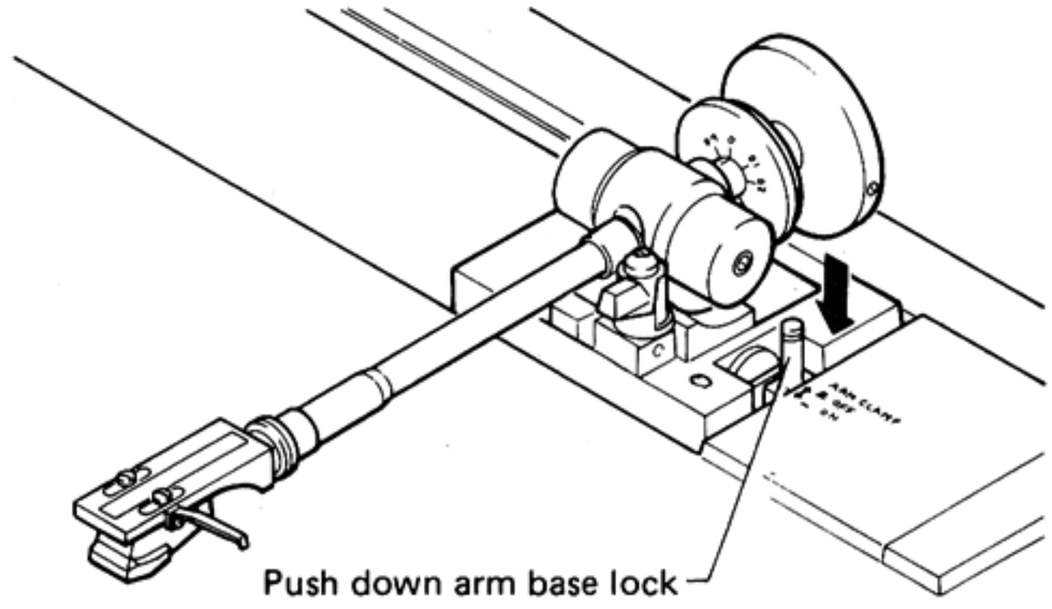


STEP 4: OPERATIONS AFTER TONEARM ADJUSTMENTS

1. Lift the arm base lock (1), hold the tonearm base and then move it gently to the right until it stops (2). If the pipe is held instead of the base, this may unnecessarily strain the tonearm and so always take hold of the base.

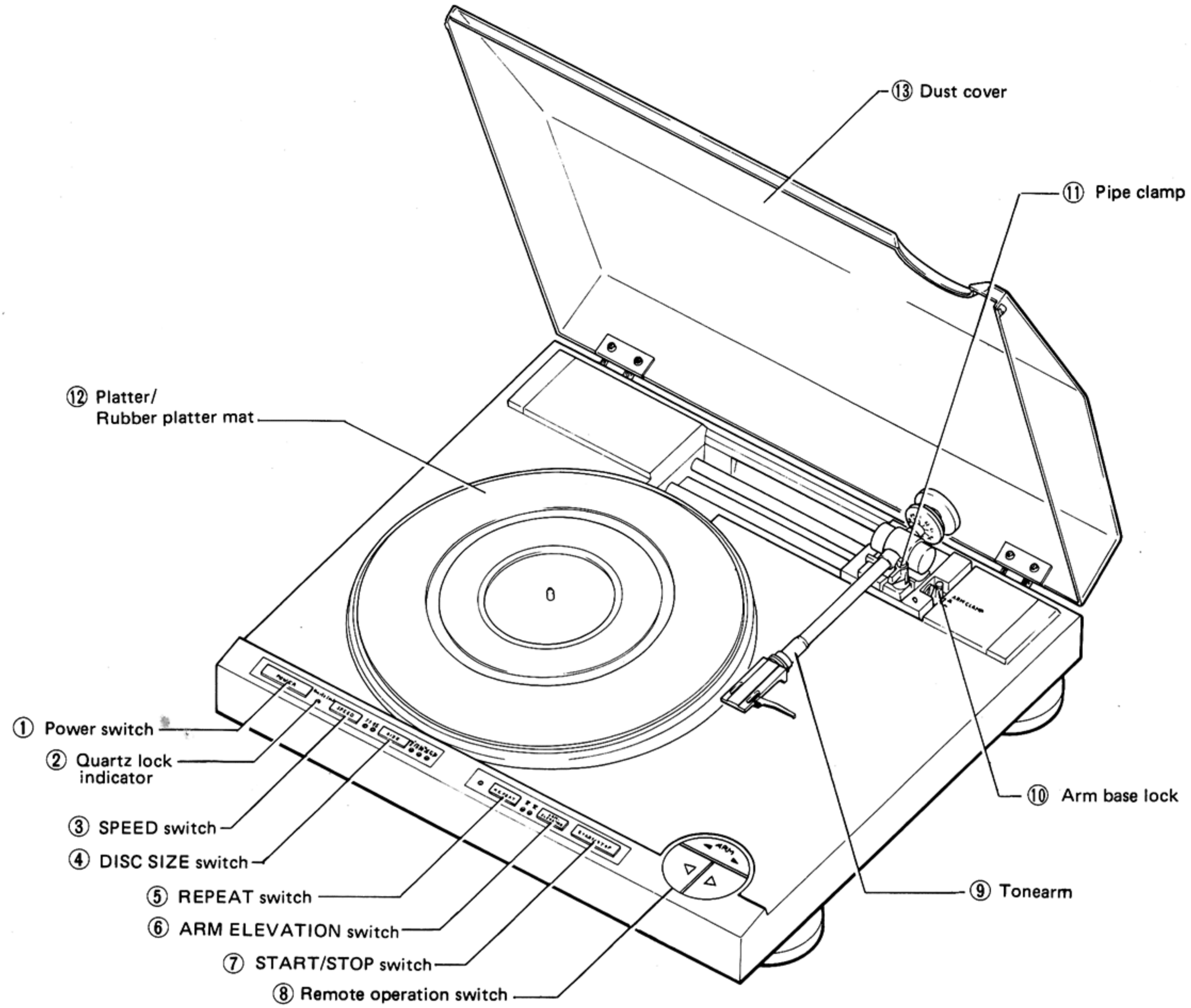


2. As in the figure, push down the arm base lock and secure the tonearm.



3. Rotate the pipe clamp and secure the pipe.

PANEL FACILITIES



① POWER SWITCH

Used to switch on and off the power to the turntable. Power is supplied when the switch is depressed (ON). The SPEED switch indicator (33) comes on. The power is switched off when the POWER switch is released.

NOTES:

- **The platter does not rotate when the tonearm is positioned at the far right even if the switch is depressed and the power supplied.**
- *With each push, this switch alternates between the ON and OFF positions.*
- *Keep the POWER switch at the OFF position when you are not using the turntable.*

② QUARTZ LOCK INDICATOR

This indicator illuminates when the platter is revolving at the specified rate of 33-1/3 or 45 rpm.

NOTE:

If the platter speed varies, such as when the speed switch is changed from one position to another or when you press momentarily on the platter, the indicator will go off. As the platter revolution returns to the specified speed, the indicator will illuminate again.

③ SPEED SWITCH

33 . . . . . Set the switch to this position when playing a 33-1/3 rpm record such as an LP. When it is depressed, the 33 indicator lights up, and the platter rotates at a speed of 33-1/3 rpm.

45 . . . . . Set the switch to this position when playing a 45 rpm record like an EP. When it is depressed, the 45 indicator lights up, and the platter rotates at a speed of 45 rpm.

④ DISC SIZE SWITCH

Selects the switch that corresponds to the size of the record you want to hear for auto play operation.

12"30 . . . For 30cm records
10"25 . . . For 25cm records
7"17 . . . For 17cm records

- Used to select the record size when depressed. For instance, when the 30cm indicator lights up, depress the switch for the 25cm position, and depress it again for the 17cm position. Depressing the switch once more sets it to the 30cm position.
- When the power switch is turned ON, the turntable will always be set for records with a diameter of 30cm and the corresponding light will come on.

NOTE:
This switch will not work if depressed when the tonearm is moving (auto lead-in, auto-return, auto cut).

⑤ REPEAT SWITCH

Press this switch for repeat play. When pressed the indicator will light up, and the record will be played again (refer to page 14 for further details on repeat play). Press this switch again to release it. The indicator will go off and the repeat play function will be released.

NOTE:
This switch will not work if depressed when the tonearm is moving (auto-return, auto cut).

⑥ ARM ELEVATION SWITCH

Use this switch to interrupt play temporarily or to perform manual play.
When the DOWN position is depressed, the tonearm will descend and when the UP position is depressed, the tonearm will rise. These two operations will be performed alternately every time the switch is pressed.

NOTES:
- **When the POWER switch is set to ON, the tonearm will start in the UP position.**
- **This switch will not work if depressed when the tonearm is moving (auto lead-in, auto-return, auto cut).**
- **When the switch is at UP, the auto-return cancelling mechanism is actuated and so there will be no auto-return.**

⑦ START/STOP SWITCH

Press this switch for auto play. The platter will start to rotate, the tonearm will automatically move over to the edge of the record and play will begin (auto lead-in).
If this switch is pressed during play, the tonearm will automatically return to the arm base lock position, the platter will stop rotating and play will be suspended (auto cut).

NOTE:
This switch will not work if depressed when the tonearm is moving (auto lead-in).

⑧ REMOTE OPERATION SWITCH

Use this switch to move the tonearm by remote control. This switch has two levels of operation: press gently to move the tonearm slowly and press firmly to move the tonearm rapidly.

NOTE:
- **If this switch is depressed during record play, the tonearm will automatically rise and move in the direction of the depressed switch.**
- **This switch overrides all other controls on this turntable. When depressed, any other function currently in progress will be stopped.**

⑨ TONEARM

The tonearm function is to apply the correct tracking force to the cartridge, maintain this value precisely and allow the stylus to trace the record grooves accurately.
The tonearm can be operated manually with your hand or remotely with the remote operation switch. It is coupled to the motor switch and when it moves across to the record, the platter rotates and it stops when the tonearm is returned to the arm base lock position.

NOTE:
When the POWER switch is at OFF, the tonearm cannot be moved by either manual or remote operation. If it is forced at the OFF position, this may result in damage so always remember to set the POWER switch to ON when moving it.

⑩ ARM BASE LOCK (ARM CLAMP)

Used to secure the tonearm.
To secure the tonearm, move it to the right and then push down on the clamp. When you do not intend to use the turntable, secure the tonearm in this way. The tonearm is released when the clamp is raised.

⑪ PIPE CLAMP

This secures the tonearm pipe. When playing a record, rotate the pipe clamp counterclockwise and release the clamp. When not playing a record, set the arm elevation switch to UP (▼) and then rotate the pipe clamp clockwise and secure the pipe.

NOTE:
When the arm elevation switch is at DOWN (▼), the tonearm pipe cannot be secured. Make sure this switch is set to the UP (▼) position.

⑫ PLATTER/RUBBER PLATTER MAT

When the tonearm is moved and power is supplied to the turntable, the platter will start rotating at the set rotation speed. The rubber platter mat stabilizes the records and also absorbs external vibration.

⑬ DUST COVER

Keep this closed unless operating the controls or tonearm, or changing records. This serves to keep dust off of the records during record play. When fully opened and pulled straight up, this dust cover can be removed from the cabinet.

OPERATION

BEFORE PLAY

Proceed as follows before starting record play.

Stereo amplifier settings:

1. Set the volume control to its leftmost (minimum) position.
2. Set the power switch to ON.
3. Set the function switch to PHONO.

Turntable settings:

1. Raise the dust cover and place the record on the platter.
2. Remove the stylus cover from the cartridge.
3. Depress the POWER switch to ON.
4. Select the SPEED switch in accordance with the rated speed of the record (33 or 45 rpm).
5. Rotate the pipe clamp counterclockwise and release the tonearm pipe clamp.
6. Lift up the arm base lock and release the tonearm.
7. Lower the dust cover.

AUTO PLAY

Procedure

1. Select the DISC SIZE switch that corresponds to the size of the record which you have placed on the platter.
2. Press the START/STOP switch. The tonearm moves from the arm base lock position to the lead-in groove on the record, and the platter starts rotating, the stylus will descend gently onto the record and play will commence (auto-lead-in).
3. Adjust the volume and tone to the desired levels using the controls on the stereo amplifier.

Completion

1. When the last track on the record has been played, the tonearm will rise automatically and return to the arm base lock position. The platter will then stop (auto-return).
2. Secure the tonearm to the arm rest with the clamp.
3. Set the POWER switch to OFF.

NOTE:
There will be no auto-return operation when the ARM ELEVATION switch is at UP.

Suspension of play

Proceed as follows if you want to suspend play during a performance.

- Press the START/STOP switch and the tonearm will return automatically to the arm base lock position, and the platter will stop rotating (auto cut).

REPEAT PLAY

Proceed as follows if you want to listen to the same record again and again:

1. Press the REPEAT switch.
2. Press the START/STOP switch and play will begin.
3. When the last track on the record has been played, the tonearm will rise, return to the first track, descend onto the record, and play will be repeated.

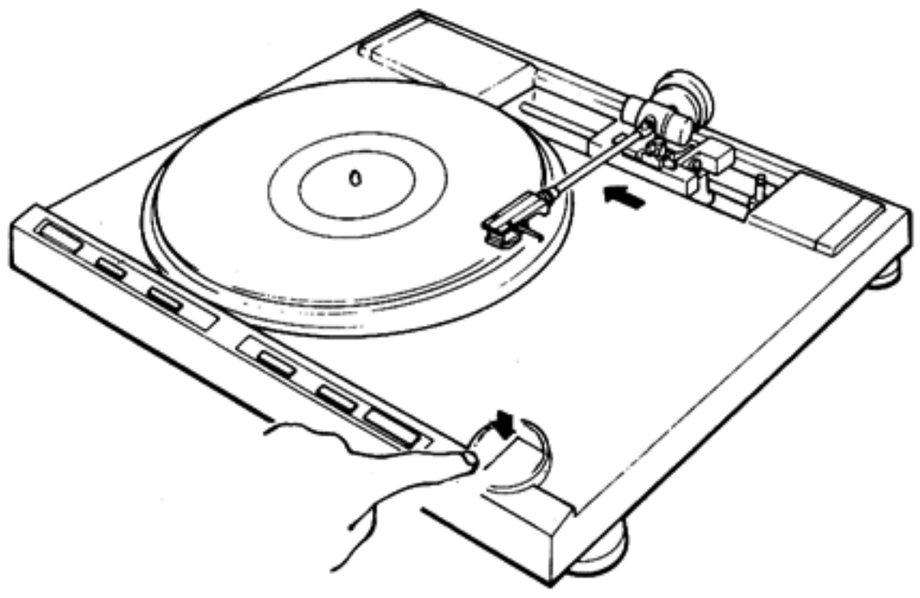
Press the REPEAT switch again to release the repeat play function. The function can also be releassed by pressing the START/STOP switch and suspending play or by setting the POWER switch to OFF.

MANUAL PLAY

1. Move the tonearm over the record.

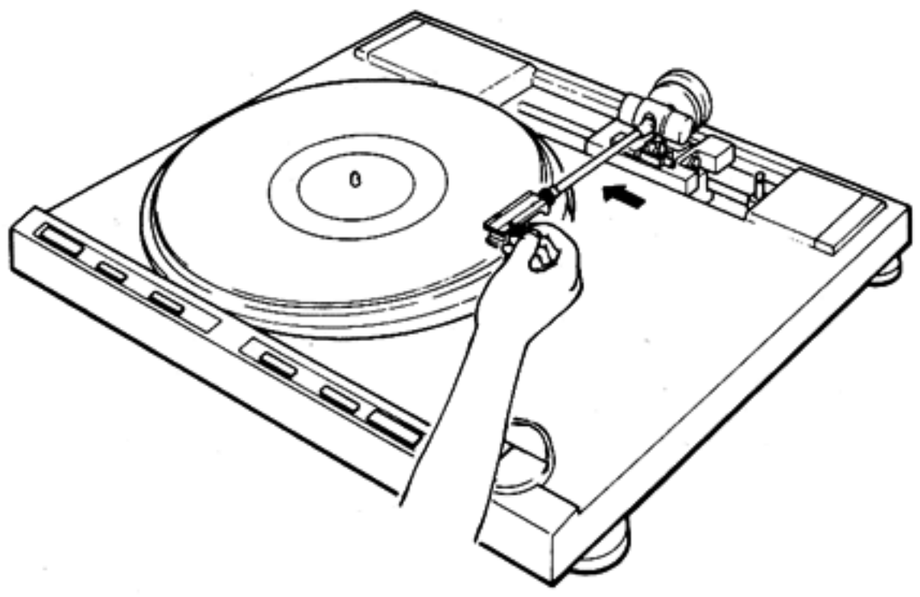
■ Remote control operation

Press the Remote operation switch to move the tonearm until the stylus is directly over the place where record play is to begin.
Pressing the [◄] side moves the tonearm to the left, the [►] side moves the tonearm to the right. Press gently to move the tonearm slowly and press firmly to move the tonearm rapidly.



■ Manual operation

Set the ARM ELEVATION switch to the UP (▼) position. (The ▼ indicator lights up.)
Holding the headshell with your fingers, manually move the tonearm until the stylus is directly over the place where record play is to begin.



2. Depress the ARM ELEVATION switch to the DOWN (▼)postion. The tonerm descends gently onto the record and play begins.

NOTE:
When the ARM ELEVATION switch is either in its UP or DOWN position, the tonearm can be moved with a finger.

Interrupting play and changing tracks

1. Depress the REMOTE OPERATION switch to move the tonearm to the desired record band. (The tonearm will automatically rise and move to the right or left.)
2. Depress the ARM ELEVATION switch. The tonearm now descends onto the record and play begins.

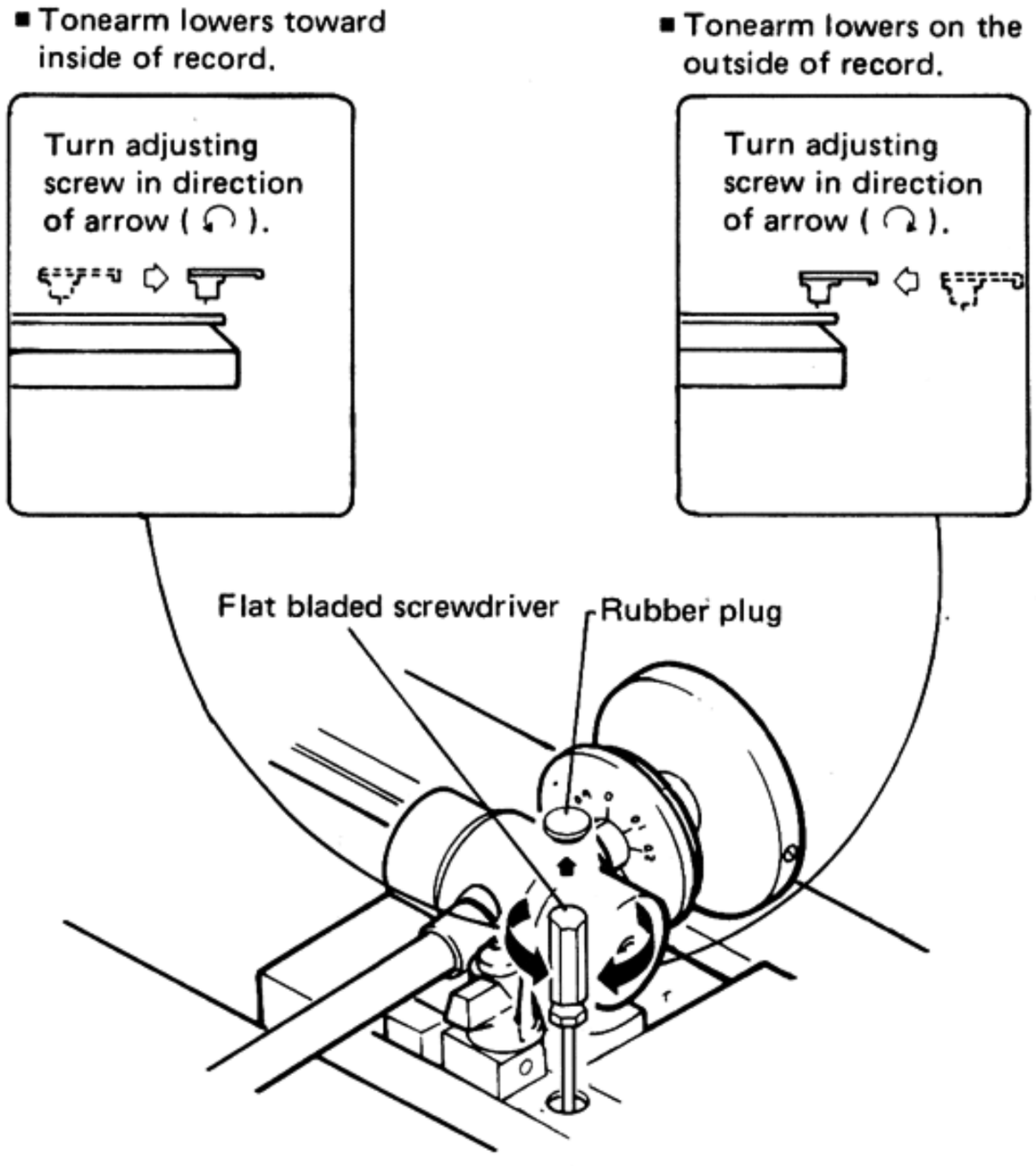
OPERATION PRECAUTIONS

- **When the POWER switch is at OFF, do not move the tonearm. Failure to heed this warning may result in a damage.**
- **Do not set the POWER switch to OFF during play. To set this switch to OFF, always set the ARM ELEVATION switch to UP. If set to OFF with the switch at DOWN, the stylus or record may be damaged when the POWER switch is set to ON again.**
- Always clean the stylus both before and after playing a record with a soft brush and make it a rule to clean the records with a good quality cleaner.
- When changing the headshell, clamp the tonearm to the arm base lock so that the tonearm shaft is not strained in any way.
- Be careful not to make the turntable vibrate while a record is playing since this can result in damage to the stylus and record.
- Place only one record at a time on the platter. If two or more records are stacked on the platter, the styus will not make proper contact with the grooves, and this will impair the quality of reproduction.
- Do not disconnect the power cord while the stylus is still in a record groove as this may damage the stylus and record.
- Never obstruct the platter with the hand while it is rotating. This may cause damage.
- **Take care not to place metal objects (such as screws) on the rear and under side of the cabinet since the unit may be attracted by the cabinet due to the action of the magnet.**
- **Take care not to insert a screw or similar object into the hole where the tonearm moves. This will result in a tonearm malfunction or damage.**

ADJUSTING THE TONEARM LOWERING POSITION

When the tonearm doesn't lower in the right position during automatic playback, adjust according to the following procedures. (Be careful not to damage the record disc with the stylus while making this adjustment.)

1. Place a 30cm record on the platter.
2. Depress the START/STOP switch and start automatic playback. Note the direction and amount the lower position is off.
3. Depressing the START/STOP switch, return the tonearm to its base lock.
4. After the platter has stopped rotating, lock the arm base lock and remove the rubber plug from the adjustment access hole.
5. Release the arm base lock, refer to the illustration at the right and adjust as follows using a small flat bladed screwdriver:
   - When the stylus lowers to the outside of the record, turn the screw clockwise (↷).
   - When the stylus lowers too far to the inside of the record, turn the screw counterclockwise (↶).
6. Depress the START/STOP switch and check the adjustment. If the lowering position is still off, repeat steps 3. through 6. above.
7. When the adjustment is completed, lock the arm base lock and replace the rubber plug in the adjustment access hole.


■ Tonearm lowers toward inside of record.
Turn adjusting screw in direction of arrow (↶).
■ Tonearm lowers on the outside of record.
Turn adjusting screw in direction of arrow (↷).
Flat bladed screwdriver
Rubber plug

MAINTENANCE

GUIDE BAR MAINTENANCE

When the guide bars are covered with dirt or fingerprints, this may adversely affect the tonearm operation. In cases like this, wipe clean with the accessory cloth. If the dirt is not easily removed, dip a cloth into alcohol and wipe clean.

CABINET AND DUST COVER MAINTENANCE

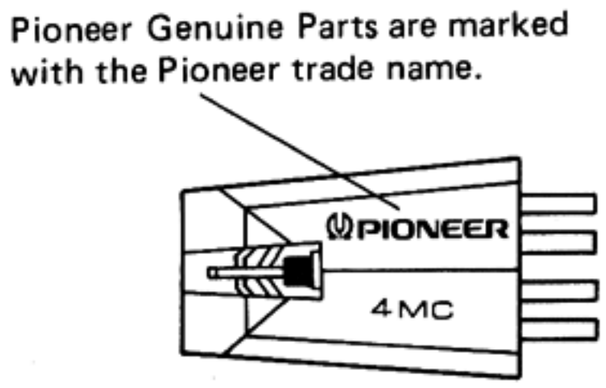
When the cabinet or dust cover becomes dusty or dirty, wipe it clean with a soft dry cloth. Remember that the surfaces can be corroded by furniture wax, thinner, and benzine and also by insecticide spray. The dust cover can be detached and cleaned.

STYLUS MAINTENANCE

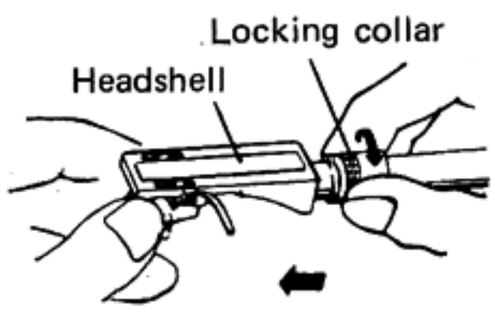
If the stylus tip is clogged with dust, the reproduced sound quality will be impaired. Use a soft brush to keep the stylus clean at all times. Be careful not to touch the tip since this may damage it. When using stylus cleaner (organic solvent), benzine or thinner to clean the stylus tip, take care not to allow any of the liquid to come into contact with the stylus holder. This may change the material.

STYLUS REPLACEMENT (Applicable to S/G model only)

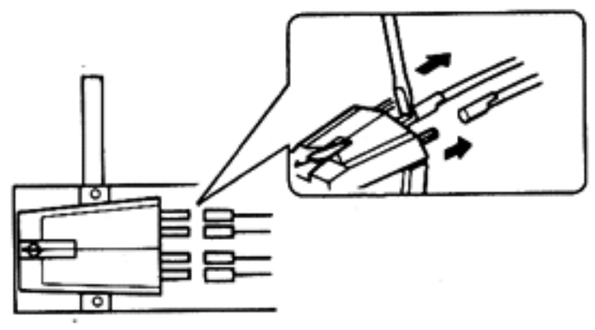
- **The life of the furnished cartridge is from 800 to 1000 hours. (Equivalent to 1~2 hours daily use for 1~2 years.)**
  Using a worn-out or damaged stylus will result in sound distortion or damage to the record disc. To be safe, replace the stylus before it is worn-out.
- **A replacement stylus may be purchased at the Pioneer dealer where you bought this turntable. Specify a Pioneer PN-4MC replacement stylus.**
  The cartridge furnished with this turntable was developed by Pioneer especially for use with this unit, and only the PN-4MC may be used with this cartridge.
- **Always use Pioneer Genuine Parts for stylus replacement**
  Using other replacement stili may result in degraded performance or damage to the unit voiding the Pioneer guarantee.



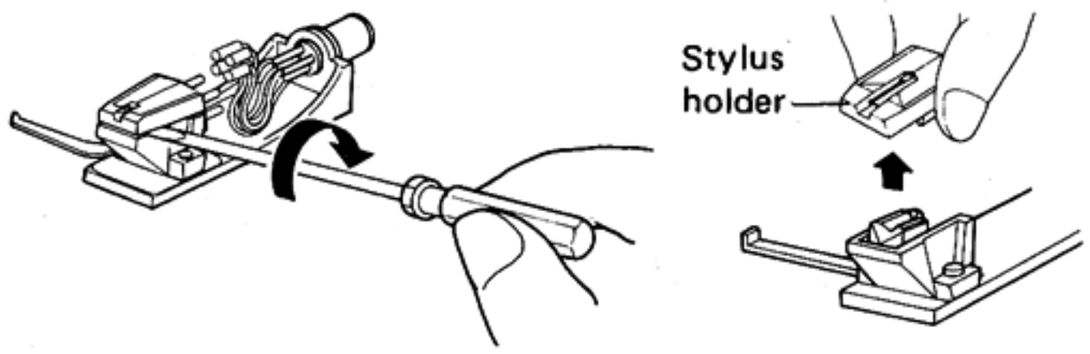
1. **Secure the tonearm in the arm rest with the clamp.**
2. **Remove the headshell from the tonearm.**
   Remove the headshell by turning the locking collar in the direction of the arrow.



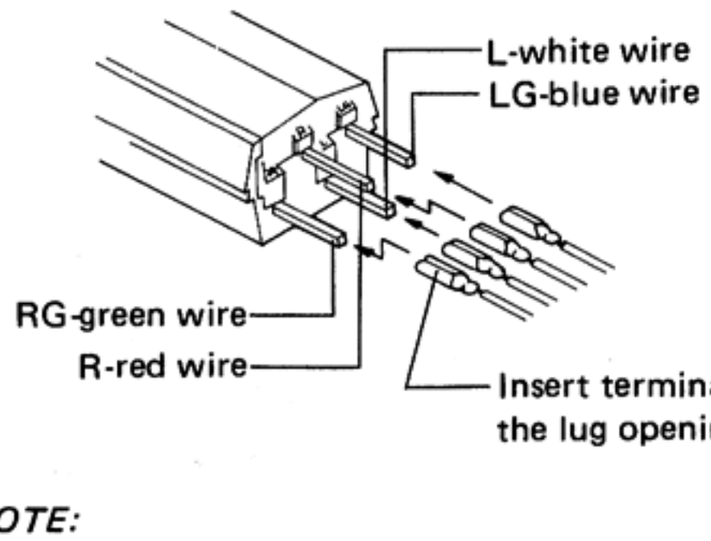
3. **Disconnect the lead wires from the cartridge.**
   Remove the terminal lugs with a small screwdriver or tweezers.



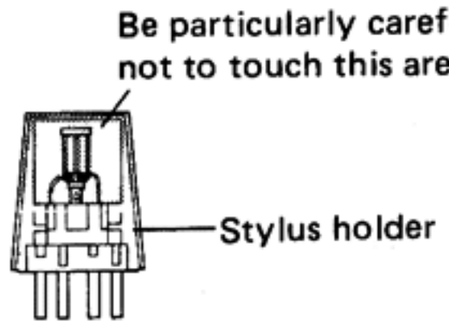
4. **Remove the stylus from the cartridge.**
   Insert a small screwdriver into cartridge's slot and rotate as shown in the figure. (The stylus holder will rise slightly.)
   Grasp the stylus holder with your fingers and pull in the direction of the arrow.



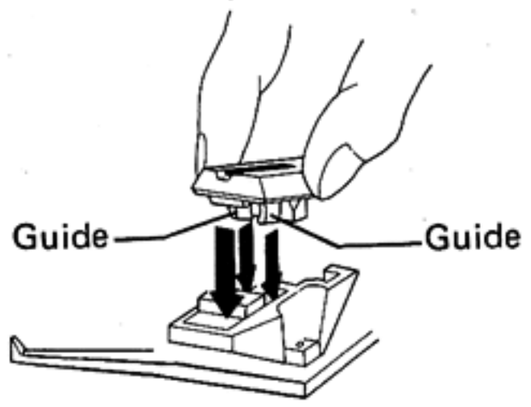
5. **Connect the lead wires to the new stylus holder.**



NOTE:
When replacing the stylus holder, be careful not to touch the internal coil or wiring.



6. **Attaching the new stylus holder to the cartridge.**
   Lining the stylus holder up with the guide channel, press the holder into the cartridge with your fingers until a click is heard.



7. **Attach the headshell to the tonearm.**
   Following the reverse procedure of step 2. above, remount the headshell to the tonearm. Make sure the headshell is fully inserted to the shoulder on the tonearm.

TROUBLESHOOTING

Sometimes, an operational fault can be mistaken for a malfunction or failure. Check the following points and see if you can find the symptoms of the trouble below before you get in touch with a serviceman. If you cannot locate the symptoms, contact your nearest Pioneer dealer.

Symptom	Possible trouble	Remedy
No sound.	1. Phono cables are not connected properly.	1. Connect cables securely to the PHONO input jacks on the amplifier (see page 8).
	2. Headshell is not properly attached.	2. Firmly secure tonearm locking collar (see page 6).
	3. Cartridge lead wires are loose.	3. Attach lead wires inside headshell properly (see page 7).
	4. Amplifier is not being operated properly. (Function switch, tape monitor switch, speaker switches, etc. are not set correctly).	4. Read the operating instructions that come with amplifier.
Excessive noise.	1. Ground lead is not connected.	1. Connect properly to the amplifier's ground terminal (see page 8).
	2. Tracking force is not correct.	2. Refer to tracking force adjustment on page 9.
	3. Dust or dirt has collected on the stylus tip.	3. Clean the stylus tip with a soft brush.
	4. Dust or dirt has collected on the record.	4. Clean the record with a good quality cleaner.
Sound is distorted.	1. Dust or dirt has collected on the stylus tip.	1. Clean the stylus tip with a soft brush.
	2. Tracking force is not correct.	2. Refer to tracking force adjustment on page 9.
	3. Stylus is worn.	3. Replace with new stylus.
	4. Amplifier's tone controls set too high.	4. Set tone controls to lower position.
Tonearm does not descend with auto play	1. ARM ELEVATION lever is set to UP position.	1. Set to DOWN position.
	2. Tracking force is not correct.	2. Refer to tracking force adjustment on page 9.
Tonearm does not move with auto play.	Arm clamp is still fastened.	Release arm clamp.
Intermittent sound.	1. Tracking force is not correct.	1. Refer to tracking force adjustment on page 9.
	2. Stylus is worn.	2. Replace with new stylus.
	3. Record is scratched or warped.	3. Replace record.
Tonearm movements is stiff with manual operation.	**1. Arm elevation height not adjusted properly.** **2. POWER switch at OFF.**	**1. Adjust the arm elevation height properly.** **2. Set POWER switch to ON.**
Tonearm moves by itself.	**Cabinet is not level.**	**Adjust the cabinet with the insulators and make it perfectly level.**

If you detect any trouble when playing records, the fault may not lie with the turntable but with other hi-fi components. Be sure to check the amplifier, speaker system, and any other electrical equipment which you are using in the vicinity of the turntable.

SPECIFICATIONS

Motor and Turntable

Drive System . . . . . Direct-drive
Motor . . . . . Ouartz PLL Hall motor
Turntable Platter . . 310mm diam. aluminum alloy die-cast
Inertial Mass . . . . 330kg-cm^2 (including platter mat mass)
Speeds . . . . . 33-1/3 and 45rpm
Wow and Flutter . . . . . Less than *0.012% (WRMS)
0.023% (WRMS)
0.035% (DIN)

(Values marked with an "*" designate the wow and flutter for motor, and do not include the cartridge or tonearm load.

Signal-to-Noise Ratio . . . . . More than 78dB (DIN-B)
(with Pioneer cartridge model PC-4MC)

Rotational Characteristics

Build-up Time . . . . . within 180° rotation at 33-1/3rpm
Speed Deviation . . . . . Less than 0.002%
Speed vs. Load Characteristics . . . . Stable up to 200 grams drag load
Speed Drift . . . . . Less than 0.00008%/h at 33-1/3rpm
Less than 0.00003%/degree temp change at 33-1/3rpm

Tonearm

Type . . . . . Linear Motor Direct-drive
Static-balance type, Linear-tracking arm
Effective Arm Length 190mm
Overhang 0mm
Usable Catridge Weight
(including headshell weight) . . . . 6g (min.) to 32g (max.)
Arm Height Adjust Range . . . . . ±3mm
Headshell weight 10.5g

Subfunctions

Auto lead-in
Auto-return
Auto cut
Quick repeat
Quick play
Quick stop
Stylus pressure direct-readout counterweight
Arm height adjusting device
Cueing device
Free stop hinges

PC-4MC Specifications (S/G model)

Type . . . . . Moving coil type
Stylus . . . . . 0.3 x 0.7 mil diamond (PN-4MC)
Output Voltage . . . . . 1.5mV (1kHz, 50mm/s Peak velocity, LAT)
Tracking Force . . . . . 1.7g to 2.3g (proper 2g)
Frequency Response . . . . . 10 to 35,000Hz
Recommended Load 50kΩ
Weight 3.1g

Miscellaneous

Power Requirements
HBT model . . . AC220/240V ~ (switchable), 50, 60Hz
S/G model . . . . AC110/120/220/240V ~ (switchable), 50, 60Hz
Power Consumption . . . . . 35W (HBT model)
10W (S/G model)
Dimensions . . . . . 494(W) x 154(H) x 456(D)mm
19-7/16(W) x 6-1/16(H) x 17-15/16(D) in.
Weight . . . . . 13.5 kg/29 lb 13 oz

Accessories

EP Adapter 1
Screwdriver 1
Sub-weight 1
Overhang gauge 1
Level 1
Cleaning cloth 1
Headshell and cartridge (S/G model only) 1
Headshell (HBT model only) 1
Operating instructions 1

NOTE:
Specifications and design subject to possible modification without notice, due to improvements.

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